



Submitted Date: 10/5/2010 11:00:35 AM

Easygrants ID: 419

Funding Opportunity: Category One	Applicant Organization: Pit Resource Conservation District
Task: Submit Application Non-EO	Applicant Name: Ms. Sharmie Stevenson



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PROJECT CONTACT INFORMATION	
Name	Ms. Sharmie Stevenson,
Title	Business Manager
Organization	Pit Resource Conservation District
Primary Address	P.O. Box 301, , , Bieber, CA, 96009
Primary Phone/Fax	530-299-3405 Ext.
Primary Email	pitrcd@hdo.net



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PROJECT INFORMATION	
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Project Title	Lower Ash Creek Wildlife Area Restoration Project
Brief Description	RCD proposes an implementation project to address degraded meadow, riparian, and aquatic conditions along the lower portion of Ash Creek. The total project restoration area is approximately 2,415 acres and consists of roughly 137,000 linear feet of stream channels. The goal is to implement a stream and meadow restoration project near Lookout, Modoc County. ximately 2,415 acres and consists of roughly 137,000 linear feet of stream channels. The project will also protect an additional 1,085 acres of meadow that is at risk from the degraded 2,415 acre area.
Total Requested Amount	1,000,000.00
Other Fund Proposed	230,315.00
Total Project Cost	1,230,315.00
Project Category	Site Improvement/Restoration
Project Area/Size	3.8
Project Area Type	Acres
Have you submitted to SNC this fiscal year?	No
Is this application related to other SNC funding?	No

Project Results

Restoration



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Project Purpose	Project Purpose Percent
Resource Development	

County
Lassen
Modoc

Sub Region
North



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PROJECT OTHER CONTACTS INFORMATION

Other Grant Project Contacts

Name: Ms. Sharmie Stevenson,
Project Role: Authorized Representative
Phone: 5302993405
Phone Ext:
E-mail: pitrcd@hdo.net

Name: Mr. Todd Sloat,
Project Role: Day-to-Day Responsibility
Phone: 5303365456
Phone Ext:
E-mail: tsloat@citlink.net

Name: Mr. John T. Ketelsen,
Project Role: County Administration
Phone: 0000
Phone Ext:
E-mail: coadmin@co.lassen.ca.us

Name: Mr. Rick Rudometkin,
Project Role: County Administration
Phone: 0000
Phone Ext:
E-mail: cao@co.modoc.ca.us

Name: Waterworks District #1 Lassen County,
Project Role: Water Agency 1 Contact
Phone: 5302945524
Phone Ext:
E-mail: Noemail@none.submitted.org



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PROJECT LOCATION INFORMATION

Project Location

Address:	P.O. Box 301, , , Bieber, CA, 96009 United States
Water Agency:	Lassen County Waterworks District #1
Latitude:	41°11'29"
Longitude:	121°01'56"
Congressional District:	N/A
Senate:	N/A
Assembly:	N/A
Within City Limits:	No
City Name:	



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PROJECT BUDGET INFORMATION

Direct

Description	Num of Units	Per Unit Cost	Total
Pit RCD Business Manager	1	.00	.00
Travel Mileage	10000	.00	.00
Project Management	1	.00	.00
Coordination	1	.00	.00
Pre-const. Archeology	1	.00	.00
Pre-const. Botany	1	.00	.00
Construction Supervision	1	.00	.00
Constr. - revetement/grading	1	.00	.00
Design, supervision pipeline	1	.00	.00
Construction-Earthwork	1	.00	.00
Total for all direct line items,	1	1,000,000.00	1,000,000.00



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personnel/services			
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Total Direct	1,000,000.00
Direct Detail	Total direct costs is \$2,890,880. The SNC grant request is \$1,000,000 of that amount. Individual line items not broke out. Review hard copy of budget detail form.

Budget Grant Total: 1,000,000.00



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PROJECT OTHER SUPPORT INFORMATION

Other Support for the Sierra Nevada

Type :	Project Funds Other
Estimated Amount:	100,000.00
Estimated Volunteer Hours:	0
Source:	National Fish and Wildlife Foundation
Source Type:	Federal
Status:	Pledged
Description:	Funds committed per budget form
Type :	Project Funds Other
Estimated Amount:	48,600.00
Estimated Volunteer Hours:	0
Source:	Sierra Nevada Conservancy
Source Type:	Other State
Status:	Received
Description:	Budget form indicates the funds have been spent. funds were used to pay for the "design phase" of the project.
Type :	Project Funds Other
Estimated Amount:	3,715.00
Estimated Volunteer Hours:	0
Source:	DFG
Source Type:	Federal
Status:	Received
Description:	Budget form states cash funds spent
Type :	Volunteer Hours
Estimated Amount:	72,000.00
Estimated Volunteer Hours:	1440
Source:	DFG
Source Type:	Federal



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Status:	Received
Description:	Budget form indicates unit cost is \$50.00 and committed
Type :	Volunteer Hours
Estimated Amount:	6,000.00
Estimated Volunteer Hours:	150
Source:	Department of Conservation
Source Type:	Other State
Status:	Received
Description:	Budget form is \$40.00 an hour and the funds are spent

Estimated Total Amount of Resources Leveraged	230,315.00
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PROJECT REGULATORY REQUIREMENTS

Regulatory Requirements



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PROJECT TIMELINE INFORMATION

Project Timeline

Milestone/Activity: Administration
Description: Life of Grant
Expected Date: 03/30/2012
Deliverable: False

Milestone/Activity: Construction
Description: Wet weather and the contractor quits. Schedule indicates July through October 2010
Expected Date: 10/29/2010
Deliverable: True

Milestone/Activity: Reports, Monitoring, Outreach
Description: Reports and activities to occur between July 10 and March 2012. Timeframes not identified.
Expected Date: 03/30/2012
Deliverable: True



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PROJECT PEER REVIEWER INFORMATION

Reviewers

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UPLOADS

The following pages contain the following uploads provided by the applicant:

Upload Name
Table of Contents
Application Form
Authorization to Apply or Resolution
Authorization to Apply or Resolution
Authorization to Apply or Resolution
Project Summary
Evaluation Criteria Narrative
Detailed Budget Form
Performance Measures
Environmental Setting and Impacts



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Project Location Map
Project Location Map
Parcel Map Showing County Assessors Parcel Number
Topographic Map
Topographic Map
Site Plan - Only Site Improv. or Restoration Proj.
Photos of the Project Site
Regulatory Requirements or Permits
Letters of Support
Letters of Support
Letters of Support
Completed Checklist



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Land Tenure- Only for Site Improvement Projects
Leases or Agreements
CEQA Documentation
CEQA Documentation
NEPA Documentation

To preserve the integrity of the uploaded document, headers, footers and page numbers have not been added by the system.

LOWER ASH CREEK WILDLIFE AREA RESTORATION PROJECT

PIT RESOURCE CONSERVATION DISTRICT SNC SOG CAT 1 PROPOSAL

TABLE OF CONTENTS

Application Form	I.
Pit Resource Conservation District Resolution No. 2010-01	II.
Project Summary	1.
Evaluation Criteria	3.
Work Plan and Schedule.....	5.
Budget	6.
Restrictions, Technical Documents, and Agreements	7.
Land and Water Benefits	8.
SNC Program Goals	9.
Cooperation, Community Support	11.
Project Design, Management, and Sustainability	11.
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Environmental Setting and Impacts	22.
Project Location, Topographic Maps, Site Plan, and Photos.....	23.
Land Tenure, Leases or Agreements, CEQA, NEPA, Regulatory Requirements	23.
Demonstration of Support	24.
Appendix A	25.
Appendix B.	26.

**SIERRA NEVADA CONSERVANCY
PROPOSITION 84 GRANT APPLICATION FORM
CATEGORY ONE GRANTS**

Rev. January 2010

Complete all applicable items on both pages of form.

1. PROJECT NAME

Lower Ash Creek Wildlife Area Restoration Project

2. REFERENCE NUMBER

3. APPLICANT (Agency name, address, and zip code)

Pit Resource Conservation District

P.O. Box 301

Bieber, CA 96009

4. APPLICANT TYPE:

☐ Nonprofit Organization ☒ Government

☐ Tribal Organization

5. APPLICANT'S AUTHORIZED REPRESENTATIVE

Name and title – type or print

Phone

Email Address

☐ Mr.

☒ Ms. Sharmie Stevenson, Business Manager (530) 299-3405 pitrcd@hdo.net

6. PERSON WITH DAY-TO-DAY RESPONSIBILITY FOR ADMINISTRATION OF THE GRANT

(If different from Authorized Representative)

Name and title – type or print

Phone

Email Address

☒ Mr. Todd Sloat, Watershed Coordinator (530) 336-5456 tsloat@citlink.net

☒ Ms. Sharmie Stevenson (see above)

7. PERSON WITH FISCAL MANAGEMENT RESPONSIBILITY FOR GRANT CONTRACT/INVOICING

(If different from Authorized Representative or Day to Day Administrator)

Name and title – type or print

Phone

Email Address

☐ Mr.

☒ Ms. Sharmie Stevenson (see above)

8. FUNDING INFORMATION

SNC Grant Request

\$ 1,000,000

(Must be \$5,000 - \$1,000,000)

Other Funds

\$ 230,315

Total Project Cost

\$ 4,020,195

9. PROJECT CATEGORIES

☒ **Site Improvement (fill in all that apply)**

Project Area: 3.8 square miles

Total Acres: 2,415

SNC Portion (if different): _____

Total Miles (i.e. river or stream bank): 26

SNC Portion (if different): _____

9a. DELIVERABLES

(Select one primary deliverable)

☒ Restoration

☐ Enhancement

☐ Resource Protection

☐ Infrastructure Development / Improvement

☐ **Acquisition (fill in all that apply)**

Project Area: _____

Total Acres: _____

SNC Portion (if different): _____

Total Miles (i.e. river or stream bank): _____

SNC Portion (if different): _____

(Select one primary deliverable)

☐ Fee Title

☐ Easement or Other Landowner Agreement

10. PROJECT ADDRESS/LOCATION <i>(Include zip code)</i> Pit RCD, P.O. Box 301, Bieber, CA 96009	
11. LATITUDE AND LONGITUDE LAT 41°11'29", LONG 121°01'56"	
12. COUNTY Lassen and Modoc	13. CITY <i>(Is project within city limits? If so, which one?)</i> The project is not within city limits.
14. NEAREST PUBLIC WATER AGENCY (OR AGENCIES) CONTACT INFORMATION: <div style="display: flex; justify-content: space-between;"> Name: Lassen County Waterworks District # 1 (Steve Jackson) Phone Number: (530) 294-5524 </div> Email address: N/A	
<div style="display: flex; justify-content: space-between;"> Name: Phone Number: </div> Email address:	
15. CEQA OR NEPA DOCUMENT TYPE (if applicable) <div style="display: flex; justify-content: space-between; margin-top: 5px;"> <div style="width: 48%;"> <input type="checkbox"/> Notice of Exemption <input checked="" type="checkbox"/> Negative Declaration <input type="checkbox"/> Environmental Impact Report </div> <div style="width: 48%;"> <input type="checkbox"/> Finding of No Significant Impact <input type="checkbox"/> Environmental Impact Statement <input type="checkbox"/> Joint CEQA/NEPA Document </div> </div>	
16. STATE CLEARINGHOUSE NUMBER 2010062071	
17. APPRAISAL <div style="display: flex; justify-content: space-between;"> <input type="checkbox"/> Submittal with application <input type="checkbox"/> Submittal by _____ </div>	

I certify that the information contained in the Application, including required attachments, is accurate.

Signed (*Authorized Representative*)

Date

Todd Sloat, Watershed Coordinator
Name and Title (*print or type*)

Board of Directors Resolution No. 2010-01

In the matter of: A RESOLUTION APPROVING THE APPLICATION(S) FOR GRANT FUNDS FOR THE SIERRA NEVADA CONSERVANCY GRANT FUNDING PROGRAM 2010/11.

The following RESOLUTION was duly passed by the Board of Directors of the Pit Resource Conservation District at a regular meeting held August 9, 2010, by the following vote:

Ayes: 4

Noes: 0

Abstentions: 0

Absent: 1

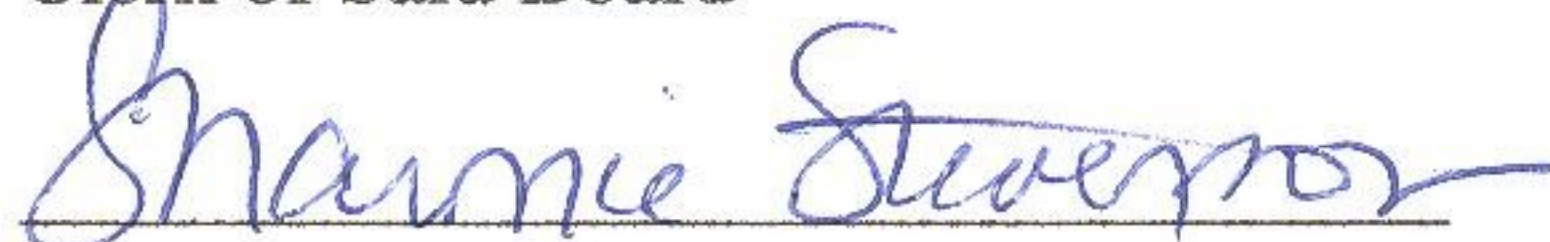
Signed and approved by:



Chair, Board of Directors

ATTEST:

Clerk of Said Board



WHEREAS, the Legislature and Governor of the State of California have provided funds for the program shown above; and

WHEREAS, the Sierra Nevada Conservancy (SNC) has been delegated the responsibility for the administration of a portion of these funds through a local assistance grants program, establishing necessary procedures; and

WHEREAS, said procedures established by the Sierra Nevada Conservancy require a resolution certifying the approval of application(s) by the Applicant's governing board before submission of said application(s) to the SNC; and

WHEREAS, the Applicant, if selected, will enter into an agreement with the SNC to carry out the project; and

WHEREAS, the Pit Resource Conservation District has identified the following: Lower Ash Creek Wildlife Area Restoration Project, Hunsinger Draw Planning Project, Butte

Creek Planning Project, Floyd Freeney Planning Project, and other projects that are valuable toward meeting its mission and goals.

BE IT HEREBY RESOLVED by the Board of Directors of the Pit Resource Conservation District that this Board:

1. Approves the submittal of applications for the above mentioned projects; and
2. Certifies that Applicant understands the assurances and certification requirements in the application; and
3. Certifies that Applicant or title holder will have sufficient funds to operate and maintain the resource(s) consistent with the long-term benefits described in support of the application; or will secure the resources to do so; and
4. Certifies that Applicant will comply with all legal requirements as determined during the application process; and
5. Appoints Todd Sloat and/or Sharmie Stevenson, or designee, as agent to conduct all negotiations, execute and submit all documents, including but not limited to: applications, agreements, payment requests, and so on, which may be necessary for the completion of the aforementioned project(s)

PASSED AND ADOPTED by the Pit Resource Conservation District on the 9th day of August, 2010

County of Lassen
ADMINISTRATIVE SERVICES



ROBERT F. PYLE

District 1

JIM CHAPMAN

District 2

LLOYD I. KEEFER

District 3

BRIAN D. DAHLE

District 4

JACK HANSON

District 5

John T. Ketelsen
County Administrative Officer
email: coadmin@co.lassen.ca.us

Julie Morgan
Assistant to the CAO
email: jmorgan@co.lassen.ca.us

Regina Schaap
Administrative Assistant
email: rschaap@co.lassen.ca.us

County Administration Office
221 S. Roop Street, Suite 4
Susanville, CA 96130
Phone: 530-251-8333
Fax: 530-251-2663

August 24, 2010

Pit Resource Conservation District
PO Box 301
Bieber, CA 96009

Dear Pit RCD Board:

The Lassen County Board of Supervisors enthusiastically supports the Pit Resource Conservation District's efforts in obtaining grant funding from the Sierra Nevada Conservancy for project work. Projects proposed by the Pit RCD are in line with Lassen County goals of restoring watersheds to improve water quality, reduce sediment loading, improve riparian areas, enhance fish and wildlife habitat, and provide economic viability.

The Pit RCD has successfully partnered with the Lassen County Board of Supervisors, Lassen County Resource Advisory Council, Natural Resource Conservation Service, United States Forest Service, United States Fish and Wildlife Service, CA Department of Fish & Game, CA Regional Water Quality Control Board and the CA Department of Conservation for project work in the past and the Board recognizes the quality of work that has been done on these projects.

The Board of Supervisors encourages the Sierra Nevada Conservancy to fully fund proposals from the Pit RCD as they will continue to meet and exceed expectations for exemplary project work.

Sincerely,

A handwritten signature in blue ink, appearing to read "Robert Pyle", is written over a horizontal line.

Robert Pyle, Chairman
Lassen County Board of Supervisors

DAN MACSAY
1st District
JEFFREY BULLOCK
2nd District
PATRICIA CANTRALL
3rd District
LOREN "SHORTY" CRABTREE
4th District
DAVE BRADSHAW
5th District



STEPHANIE NORTHRUP
Clerk of the
BOARD OF SUPERVISORS
204 S. Court Street
ALTURAS, CALIFORNIA 96101
(530) 233-6201
Fax (530) 233-2434

August 16, 2010

Pit Resource Conservation District
P.O. Box 301
Bieber, CA 96009

Dear Chairman Parks:

This letter is to support your effort in obtaining grant funds from the Sierra Nevada Conservancy for restoration project work within the Pit Resource Conservation District boundaries. The Modoc County Board of Supervisors is aware of the numerous restoration projects that have been successfully implemented in your district and fully supports your endeavor to continue valuable watershed restoration activities.

The Board recognizes the need for continued project work in the Big Valley area that will enhance wildlife and fish habitat, improve water quality, reduce sediment, and restore meadows and flood plains. We appreciate the commitment of the Pit RCD which has resulted in the completion of more than a dozen projects totaling over \$5,000,00 in the past seven years.

We encourage the Sierra Nevada Conservancy to fully fund proposals from the Pit RCD as they have a proven track record of consistently completing valuable projects.

Sincerely,

A handwritten signature in blue ink that reads "Dan Macsay".

Dan Macsay, Chairman
Modoc County Board of Supervisors

PROJECT SUMMARY

County: Lassen and Modoc

Applicant: Pit Resource Conservation District

Project Title: Lower Ash Creek Wildlife Area Restoration Project

PROJECT GOAL

The goal is to implement a stream and meadow restoration project near Lookout, Modoc County. As part of project implementation, the project will be featured in public outreach and education efforts of the Pit RCD, thus helping raise awareness relating to local resource management problems and solutions. The project will improve water quality in approximately 137,000 linear feet of stream channels, addressing one of the SNC's key programmatic goals. In addition, the project will directly contribute to meeting the Proposition 84 goals of restoring rivers, streams, and their watersheds by improving approximately 3,500 acres of surrounding meadow habitat.

PROJECT SCOPE

The Pit Resource Conservation District (RCD) proposes an implementation project to address degraded meadow, riparian, and aquatic conditions along the lower portion of Ash Creek. The total project restoration area is approximately 2,415 acres and consists of roughly 137,000 linear feet of stream channels. The project will also protect an additional 1,085 acres of meadow that is at risk from the degraded 2,415 acre area. This restoration project is consistent with a recently completed, large-scale collaborative planning effort (i.e. Upper Pit River Watershed Management Strategy) and addresses seven of the nine goals identified in said document. Once concluded, the Lower Ash Creek Wildlife Area Restoration Project will be the largest meadow restoration project effective in the Sierra Region.

The dominant feature of the project site is a degraded stream and meadow along Ash Creek. Although the landform evolved for thousands of years without significant degradation, non-sustainable management practices including channelization, improper bridge and culvert placement and design, and historic over-grazing have caused severe degradation in the past century. The California Department of Fish and Game (CDFG) purchased the area in 1988, but despite efforts to improve habitat conditions for wildlife, the historic disconnect between the stream channels and their floodplain has allowed meadow degradation to continue. This project proposes to restore the physical connection of Ash Creek's many stream channels to their floodplain by implementing the "pond and plug" restoration technique. The technique is also consistent with the Department's goal to improve waterfowl conditions, as ponds would be used by thousands of migratory and resident waterfowl that concentrate in the Wildlife Area.

Overall, the project will attenuate flood flows, increase shallow ground water storage, improve water quality conditions, improve aquatic resources, improve water management infrastructure, and improve meadow and riparian productivity and health. Threatened species that thrive in broad meadow systems, including the greater sandhill crane, will also benefit from the restoration. Nesting success of this species in particular has declined in degraded meadow systems due to the meadows' dry nature and resulting lack of predatory protection. In addition to improved aquatic and riparian habitat for fish and terrestrial species, the meadow productivity will also benefit livestock. The State currently leases portions of the Wildlife Area for haying livestock grazing during the summer, and revenue from these leases is used by the State and Pit

Resource Conservation District to fund other projects. The final component of the restoration project is the re-design of an existing water delivery system maintained and operated by the Wildlife Area. The current system delivers water downstream for seasonal wetland management, but does so inefficiently. The re-design of this system has been integrated into the restoration design, which not only sustains the stream and meadow, but also increases efficiency of water management and use. The overall result is a project that stimulates the economy while restoring, protecting, and sustaining a working landscape.

The proposed project will directly address the following six SNC program goals: increased opportunities for tourism and recreation, protection of living resources, preserving working landscapes, reducing the risks of natural disasters, improving water quality, and assisting the regional economy.

Funds requested within this application will be used specifically for the pond and plug component of the restoration. More funds are needed to this component and others in order to implement the project. The National Fish and Wildlife Foundation has contributed \$100,000.00, and the CDFG will contribute significant staff time for a variety of monitoring and management services. Finally, Ducks Unlimited and California Waterfowl Association will be partnering and providing technical expertise with project components such as construction supervision.

LETTERS OF SUPPORT

Insert list of letters of support included with application.

SNC PROJECT DELIVERABLES AND SCHEDULE

DETAILED PROJECT DELIVERABLES	TIMELINE
Administration	March 2011 – December 2012
Post Design, Pre-Construction	March 2011 – August 2011
Construction	August 2011 – October 2011
Reports, Monitoring, and Outreach	March 2011 – December 2012

SNC PROJECT COSTS

PROJECT BUDGET CATEGORIES	TOTAL SNC FUNDING
Direct Costs (staff time, travel, contracts/consultants, materials and supplies, equipment use/lease, other fees)	\$ 1,000,000.00
Indirect Costs (staff time, printed materials, outreach/education, equipment use, performance measure/reporting)	\$ 0
Administrative Costs	\$ 0
Total Grant Request	\$ 1,000,000.00
Other Contributions	\$ 230,315.00

EVALUATION CRITERIA

General Description

The Pit Resource Conservation District (Pit RCD) proposes a stream and floodplain restoration project for lower Ash Creek of Modoc and Lassen County. The purpose of this project is to restore the historic wet meadow and associated stream channel that have been degraded by a variety of past management practices.

Lower Ash Creek enters the Pit River near Bieber, CA. The proposed project is located on lands owned by the State of California. The State of California and the Pit RCD collaborated in 2008 to submit a proposal to the Sierra Nevada Conservancy for the design and permitting phase of the project. This phase has been completed and stakeholders (e.g. Ducks Unlimited and the California Waterfowl Association) have partnered to assist with the project's implementation.

The dominant feature of the project site is a “dehydrated” middle-elevation meadow. Historically, the ecosystem featured saturated hydric meadow soils and a dense layer of herbaceous vegetation. However, early management practices channelized portions of the creek, resulting in channel incision. Through time, the stream became disconnected from its floodplain and channels began to downcut and migrate laterally. This process led to degradation of the meadow as well as several of Ash Creek's stream channels. Today, management practices that contributed to these conditions have been corrected, but recovery of the ecosystem cannot occur without active management and restoration techniques.

The proposed project will implement the pond and plug restoration technique, which has been successfully implemented in several low-gradient meadow streams throughout the northern Sierra region. The technique consists of excavating portions of the entrenched stream and gullies to create ponds, while using the excavated material to bring adjacent areas of the stream channel to floodplain elevation. The water is then redirected to the floodplain's historic remnant channels, resulting in rehydration of the meadow and prevention of future degradation. SNC funds will be used specifically for the pond and plug portion of this project. Other project components include the repair and reconstruction of a water delivery system, which has been integrated with the restoration plan. Finally, the proposed project will be featured in public outreach and education efforts of the Pit RCD and other stakeholders (e.g. Ducks Unlimited and the California Waterfowl Association) to help raise awareness related to solving resource management problems that occur throughout the west.

Project Goals and Deliverables include:

Goal 1 – Restore the natural form and function of the stream and floodplain: Redesign, or restoration, of the channel will immediately reconnect the stream channel to its historic floodplain. This will allow for frequent, low-intensity floods—a feature that is characteristic of functioning meadows. Reconnecting the stream channel to its floodplain will directly affect the length (approximately 120,000 - 137,000 linear feet) of streambank restored (Performance Measure 6), the amount of ground water held within the meadow system (Performance Measure 12), the amount of land (approximately 2,000 - 2,415 acres) restored within the stream channel and floodplain (Performance Measure 13), and the stream flow during the rainy and dry seasons (Performance Measure 14). The restoration and subsequent flooding of the meadow surface will provide a mechanism for trapping sediment, as discussed in Goal 2.

Goal 2 – Stop soil erosion at the site: Elimination of existing gullies and entrenched channels will reduce the delivery of sediment to lower reaches of the Ash Creek watershed, bringing the amount of downstream sediment delivery near, if not equal, to pre-settlement levels. Instead of serving as a sediment contributor and conduit to downstream reaches, the meadow will once again serve as a sediment trap.

Goal 3 – Raise the local water table: Restoration of stream channel and floodplain functions will soon raise the shallow ground water table. The primary benefits of this effect include:

a. Flood attenuation: the meadows will once again store water for slow release instead of rapidly releasing runoff in concentrated flows. Released water will be cleaner, cooler and more consistent in flow throughout the year.

b. Riparian health: the higher water table will allow wetland/wet meadow vegetation to become re-established, and will improve conditions for riparian corridors along the primary stream and secondary stream channels.

By accomplishing Goals 1- 3, the restored channel and meadow will replicate the historic stream and floodplain processes, and natural channel migration across the floodplain will occur on a geologic time scale. These historic processes include the natural release of flow energies, which reduces erosive effects of high flow events, and the slow, manageable movement of sediment through the watershed. Finally, restoration of the stream and floodplain will enable the system to “evolve” with global climatic changes, thereby reducing the necessity of management actions in maintaining the functionality of the stream meadow system.

Goal 4 – Improve habitat values for the site: The restored channel will be designed with habitat features to accommodate a wide range of aquatic and riparian organisms. These features are largely absent in the existing gullied channel. The project will also incrementally improve conditions for native fish within Ash Creek.

Of particular interest will be improved habitats for the greater sandhill crane, waterfowl, shorebird, and neo-tropical songbird. Various game species will also benefit, including mule deer and valley quail, as will an innumerable amount of non-game species. Livestock forage values will also increase, and will provide for continued agricultural outputs of this once productive rangeland.

Goal 5 – Improve agricultural productivity: Experience with similar projects in the region indicates that forage outputs can actually increase while meeting other project watershed and habitat goals. Modern grazing management is drastically different from historic practices, and the State will conduct their grazing program to meet multiple management objectives while sustaining the resource. As conditions exist today, even complete elimination of grazing would not result in significant improvements to watershed function during any human time scale. Improved grazing management will ensure that, after an initial rest period, livestock utilization will not adversely affect meadow productivity for ecological or forage outputs.

Goal 6 – Document the Performance Measures (No. 1-4, 6, 12, and 13) identified in the SNC’s Category 1 Grant Program. Four Performance Measures identified within the Category 1 Grant Program will be documented throughout the life of the project. Documentation will include estimating the number of people who read newspaper and newsletter articles, recording the number of people who attend meetings where the project is discussed or presented, recording the dollar value of

resources leveraged, documenting the number and types of jobs created, and quantifying the number of new, improved, or preserved economic activities. The number of acres of land and stream channel restored will also be quantified, as well as the changes in shallow ground water and stream flow.

The benefits resulting from project completion are expected to last indefinitely with minimal active maintenance. Ensuring vegetative health by utilizing proper grazing management techniques will be the key to long-term success.

Finally, the proposed project will improve connectivity between past projects conducted in the Wildlife Area (e.g. Big Swamp Enhancement Project, Pilot Butte 3/Elkins 1C Wetland Enhancement Project) and key District projects identified in the *Pit RCD Watershed Management Strategy* (Rose Canyon Creek Restoration Project, Lower Rose Creek Restoration Project, Shaw Ranch Streambank Protection and Enhancement Project, and Mason/Monchamp/Balcom Streambank Stabilization and Floodplain Enhancement Project). The proposed project is also consistent with treatment of conditions identified in the *Pit River Watershed Assessment* as contributing to stressors of water quality in the Upper Pit River, and will address seven of the nine goals created by the *Upper Pit River Watershed Management Strategy*.

Workplan and Schedule

Table 1 (see Attachments) lists the tasks, schedule, and constraining factors for the proposed project. Task No. 1 includes the day-to-day responsibilities of invoicing, corresponding, bookkeeping, and coordinating and preparing RCD and other meetings. The Pit RCD Business Manager, Sharmie Stevenson, will conduct these duties for the life of the grant. There are no constraining factors associated with this task.

Task No. 2 includes activities such as construction bid preparation, attending a pre-bid meeting, coordinating with the Construction Manager (StreamWise), and performing any pre-construction data collection or other pre-construction task (meeting with landowners, agencies, etc). The reception of qualified bids within the construction budget and timeline is the only constraining factor associated with this task. Several local qualified contractors (e.g. contractors that have previous experience with pond and plug restoration projects) do business in the proposed project area; other qualified contractors who may not have actually constructed a pond and plug project, but who are familiar with the technique, also do business in the area.

Task No. 3 involves the construction phase of restoration. This phase includes the implementation of several restoration components, but SNC funds will be used strictly for pond and plug activities. Two constraining factors—wet weather and the termination etc. of a contractor—exist for this task. A bid, performance, and payment bond will be required to ensure project completion if, for any unforeseen reason, the contractor is unable to complete the job, quits, or is released from the RCD for lack of execution. In order to avoid potentially detrimental weather conditions, construction will begin mid-July. This timeline would ensure project completion before an “early” rainy season.

Task No. 4 includes post construction activities such as collecting as-built information, preparing project outreach material and meetings, and preparing reports for funding sources. No constraining factors are associated with this task.

Budget (See Table 2)

Funds from the Pit RCD, DFG, and SNC were used to pay for the “design phase” of this project, while funds from a Department of Conservation Grant Agreement with the Pit RCD were used to pay for permitting requirements (e.g. Section 404 and 401 compliance and Streambed Alteration Agreement). Project funding for the “implementation phase,” including matching funds and in-kind contribution sources, is outlined in Table 2. A discussion of specific line item costs is presented below.

DIRECT COSTS: Costs directly associated with the project include personnel, travel, contractors, materials/supplies, and equipment rental. Personnel costs outlined in this budget (\$57,600) pertain only to the Pit RCD staff time necessary for accounting associated with the proposed project and grant for a period of two years. These staff hours will be used for monthly billing, tracking and accounting of design contracts, etc. Hours will not be billed for any work unnecessary for the completion of the proposed project. Travel expenses include time for meetings prior to and during construction (\$5,000). Most work accomplished under the proposed project will be under contract.

i. **Watershed Management and Coordination:** Watershed management and coordination costs outlined in the budget pertain only to expenses directly related to project implementation. This line item assumes approximately 758 hours of work. The position of Pit RCD Watershed Coordinator is a contract position, currently filled by Mr. Todd Sloat and supported by Todd Sloat Biological Consulting, Inc. Mr. Sloat and his company will serve as the lead for project implementation. The Watershed Coordinator will serve as grant manager, and will provide general oversight of all project elements, including:

- Oversight to all contracts and in-kind service agreements.
- Oversight to any citizen volunteer services that may become available.
- Leadership for all meetings, field tours, and other public contact functions.
- Preparation of all legal, informational, and educational documents.
- Final editing, review, and submittal of construction bid solicitations, monitoring reports, and other reporting requirements

ii. **Hydrologist/Geologist/ Construction Management:** This line item covers contract costs for a Construction Manager responsible for the restoration design plan. These services will be provided by Rick Poore of StreamWise and Rick Maher of the California Waterfowl Association. Mr. Poore was selected through a competitive bidding process for his expertise during the project’s design phase. The RCD believes the best value and highest likelihood for project success will occur if the design contractor also serves as the Construction Supervisor. Mr. Maher has technical expertise in construction management and waterfowl ecology, and currently serves as the regional coordinator for CWA. Mr. Maher has conducted wetland restoration work adjacent to the proposed project and has technical knowledge of the Wildlife Area. This item allows for approximately 1,656 hours of service.

iii. **Construction Contractor(s):** This line item covers contract costs for pipeline and pond-and-plug construction. Several qualified contractors do business within a fifty mile radius of the project site. The RCD would prefer to use these qualified contractors and negotiate a competitive rate with each one for their services associated with this project. These contractors include Hat Creek Construction, Joiner Construction, Britton Construction, and Tony Ewing Construction. The earthwork (pond and plug) portion of construction will, by reasonable estimate, cost \$2,507,000.

iv. Pipeline Design and Supervision: This line item will be performed by Ducks Unlimited. Ducks Unlimited is a leader in engineering services for wetland enhancement projects and has staff with the expertise necessary to supervise pipeline construction activities. The engineering design and construction supervision of the pipeline reaches an estimate of \$40,000.

v. Materials and supplies necessary for project construction include rock (\$35,000) and pipeline/bulkhead materials (\$765,000).

INDIRECT COSTS: Costs indirectly associated with the project include staff expenses (e.g. worker's compensation), printed materials, outreach, monitoring, and performance measure reporting following construction activities. These costs total \$24,600.

ADMINISTRATIVE COSTS: Administrative costs include rent, telephone, audits, insurance, electricity, and water. These costs total \$11,800 for a two year period. It is assumed that implementation of the proposed project will account for approximately 25% of the RCD's operating costs, such as utilities, telephone, internet, insurance, audits, etc.

OTHER CONTRIBUTIONS: Other contributions include cash and in-kind services associated with past, present, and future project activities. These contributions total \$230,315 and are itemized in Table 2.

As shown in Table 2, the project will depend on a funding source other than the SNC. If funding from SNC is received, consistent with Table 2, said funds will be leveraged to obtain the remaining budget balance (ca. \$2,750,000). The Pit RCD has prepared a draft proposal for submission to the Wildlife Conservation Board (WCB) in September 2010. The RCD and partners have been involved in project-related correspondence with the WCB for two years, and the WCB has expressed a desire to fund the project.

If this project is not funded and constructed, the existing gullies and entrenched stream channels will widen, headcuts will continue to degrade high quality habitat (ca. 1,085 acres), land will be lost to erosion, and aquatic habitat conditions downstream from the project site will decline. This process will occur until the stream has developed a "new" floodplain at a lower base elevation. The cost associated with restoring an incised gully is proportional to the size of the gully. Other "hidden" costs include those to landowners who must comply with regulatory programs (e.g. Regional Water Quality Agriculture Waiver Program). These programs are, in part, developed because of poor watershed conditions (e.g. high sediment loading) that currently exist throughout the state.

Once the site is restored, the natural process of the stream and floodplain system will become "self-maintaining" and will require minimal costs, if any, of future landowners/land managers. Overall, the cost per acre of this restoration project is \$1,552. This value is below the generally accepted cost for meadow restoration associated with the pond and plug technique (approximately \$2,000/acre). Disregarding the allocation of approximately \$1,000,000 for additional revision of the water delivery system yields a true restoration cost of \$1,130/acre.

Restrictions, technical documents, and agreements

The CDFG and Pit RCD have complied with CEQA and received and/or notified appropriate agencies for necessary permits and approvals. A copy of the Initial Study Negative Declaration, 401 Certification, Lake and Streambed Alteration Agreement, and 404 Notification are provided in the Attachment Section.

Proposition 84 Land and Water Benefits

1. Lower Ash Creek lies at the lower portion of the Ash Creek watershed in Modoc and Lassen County, CA. Like many mountain meadow ecosystems in the region, the site's natural hydrologic balance has been detrimentally altered by past management activities. Alteration of these systems, namely by channelization and/or intensive grazing pressure, disrupt equilibrium, and the stream channels typically respond by cutting into the soft alluvial soils.

This process is underway at Lower Ash Creek. The stream has downcut into its historic channels, and is currently headcutting into high quality meadow areas that are still hydrologically connected to the stream. The collapse of equilibrium in these systems causes their associated mountain meadow ecosystems to decline rapidly. This is apparent in the meadow area of Lower Ash Creek, where "meadow" vegetation has become desiccated and is now dominated by grass and other upland tolerant plant species (e.g. sage brush). The decline of this ecosystem is a direct result of incised stream channels, which prevent regular flood recharge and serve to drain the groundwater from the meadow.

In recent years, natural stream form and function have been restored to several mountain meadow ecosystems using the pond and plug technique. This relatively new technique erases gully features by "plugging" portions of the gully and creating ponds in others. At the project's most upstream portion, flow is redirected into stable remnant channels. The technique requires careful survey and design to prevent erosion damage during peak flows. Despite the care required to prevent future erosion, the method has proven highly successful at many project sites.

Project benefits include:

- Reduction of accelerated sediment input from collapse of gully walls.
- Improved fish habitat conditions in downstream reaches from sediment reduction.
- Restored connection to historic floodplain surface.
- Improved dissipation of flood energy.
- Restored groundwater hydrology.
- Enhanced conditions for riparian recovery.
- Improved habitat for riparian obligate species.

Risk is minimized by restoring the connection between channel and floodplain, flood flows can once again spread across the wide floodplain surface, rather than concentrating within the confines of the gully walls. Proper function of this system results in a natural form of energy dissipation, and relief of most of the erosive pressure applied to the bed and banks of the stream.

Chosen Performance Measures include quantification of linear feet of streambank protected (PM 6), acres of land restored (PM 13), and acre feet of water supply conserved (PM 12). During the restoration design, a global positioning system with sub-meter accuracy was used to quantify PM 6 and PM 13. Once the project is constructed, these metrics will be recorded again for verification. In 2009, CDFG installed several ground water monitoring wells throughout the project site. These

monitoring wells have been recording data on a monthly basis since 2009, providing the project with two years of shallow ground water information prior to construction. CDFG will collect this data post construction, thereby quantifying PM 12.

2. As mentioned in the section above, several other projects using the pond and plug technique have been successfully implemented in the region. The closest in proximity to the proposed project site (Bear Creek Meadow) has been monitored since 1999. Annual reports from UC Davis graduate researchers compile and analyze significant volumes of monitoring data, and have concluded that the project remains self-sustaining. Recovery rates of riparian vegetation, habitat features, and meadow condition have exceeded expectations. The other projects have been less intensively studied, but show similar tendencies toward stable, self-maintaining conditions.

The primary objective of each of these restoration projects is to return the ecosystem to self-sustaining conditions by restoring the natural form and function of the stream and floodplain system. Local sites at which pond and plug restorations have been successfully performed are characterized by low-gradient streams, low sediment supply, and remnant channels intact on the floodplain—all characteristics that lower Ash Creek shares. The likelihood that this meadow system will respond in a similarly successful manner is great. In addition to the project's high probability of success, the existence of well-vegetated remnant channels throughout the meadow and other creek reaches makes the project site a prime candidate for restoration. No potential negative impacts to the surrounding watershed are expected.

3. Initial Bear Creek Meadow reports from UC Davis researcher Chris Hammersmark indicate that restoration of the historic groundwater hydrology in mountain meadow ecosystems has a profound effect on riparian ecosystem recovery. See ATTACHMENTS for his conclusion regarding these issues.

The restoration of the natural physical and chemical processes present in the interaction of the stream and its floodplain will once again “allow” the meadow to self-sustain and adapt to climatic changes that may occur. Based on the numerous resource values of restoration, including the amount of carbon sequestered within the meadow, the project is assumed to help current impacts on climate change in California. There are no known risks for successful project implementation to climate change.

SNC Program Goals

Below is a description of how the proposed project will address SNC program goals:

1. *Provide increased opportunities for tourism and recreation:* Improved habitat conditions will result in incremental enhancement of fish and wildlife related pursuits (e.g., hunting, bird watching, wildlife viewing) in the project area. The project area currently attracts many outdoor enthusiasts, as evidenced by the Wildlife Area's several designated parking, hiking, and hunting locations. In addition, County Road 87A is located directly in the middle of the restoration project and can be used seasonally by anyone interested in the Wildlife Area.

2. *Protect, conserve, and restore the region's physical, cultural, archeological, historical, and living resources:* The project will tend to protect, conserve, and restore physical and living resources in the form of naturally functioning streams and their associated ecosystems. Many meadows within the upper Pit River Watershed have been degraded by a variety of past management practices. This restoration will demonstrate the integration of restoration techniques and water management with

multiple resource benefits that private landowners can observe. Sensitive native fish species will also indirectly benefit from restoration due to an expected increase in summer base flows and the retention of channel pools during the dry season. Surveys by qualified archaeologists have not yet been conducted at the site, but will be conducted at a later date. Any cultural resources will be avoided and protected. Further protection will occur with the area's restoration, as gully elimination and stream stabilization reduce lateral erosion and its potential threats to nearby cultural/archeological sites.

3. *Aid in the preservation of working landscapes:* The project will directly aid in the preservation of working landscapes. The State manages the project site using general funds and those from haying and grazing rights leased to local ranchers and farmers. The haying and grazing leases are vital to the ranchers' operations, while the dollars spent during the ranchers' daily activities are returned to the community. The Pit RCD will document and quantify the value of haying and grazing leases post construction and compare these values to pre-construction which can be used to quantify Performance Measure 4.

4. *Reduce the risk of natural disasters, such as wildfires:* Reconnecting streams to their floodplains, especially in meadow systems like lower Ash Creek, reduce peak flood flows. Flood flow reduction is a result of proportionate distribution of water throughout the floodplain, rather than disproportionate concentration of water within gullies. In addition, conversion of dry grassland to hydrated meadow vegetation will reduce fire hazards. Increased groundwater storage allows restored meadows to remain "green," while providing a more natural and fire-resistant landscape.

5. *Protect and improve water and air quality:* The proposed project will directly improve water quality in the Ash Creek/Pit River watershed. The markers of improved water quality include reduced water temperatures, reduced sediment content, and increased dissolved oxygen. In addition, the acre feet of shallow ground water will be quantified prior to and post construction (PM 12). Shallow ground water is "released" during the summer from the meadow to the stream which improves water quality (e.g. flow, cooler water).

6. *Assist the regional economy through the operation of the SNC's program:* The project will improve long-term economic outputs of the local economy by improving agricultural productivity and increasing/enhancing tourism activities. Many of the services and materials necessary for project implementation are available via local vendors, who will in turn support the regional economy with their payrolls and taxes. A considerable pool of skilled heavy equipment operators with similar restoration project experience is available. Unskilled and semi-skilled labor is also readily available in the local labor market. The availability of personnel for all aspects of project implementation ensures that project payroll funds will largely stay in the region. Upon completion of the project, the Pit RCD will document the number and type of jobs created by project implementation (PM 3), and the number of new, improved, or preserved economic activities (PM 4).

An incremental increase in economic activity can also be expected due to improved availability of resources for consumptive and non-consumptive recreational use (i.e., fish, game, wildlife for viewing, etc.). Finally, the dollar value invested by SNC will be tracked in order to determine the amount of leveraged funds and project activity thereby stimulated (PM 2).

7. *Undertake efforts to enhance public use and enjoyment of lands owned by the public.*

The proposed project occurs on land managed by the State of California (Ash Creek Wildlife Area). ACWA is a designated Type B Wildlife Area, and public use is subject to regulations set forth by the

California Code of Regulations, Title 14, Section 550-551. Current public use is about 3,000 user days per year, and includes hunting, fishing, and other forms of compatible, wildlife-dependent recreation such as bird watching, hiking, and wildlife photography. ACWA has eight parking lots to accommodate public use as well as a vehicle tour route for additional wildlife viewing opportunities. The restoration efforts will directly enhance habitat for species upon which the Wildlife Area currently focuses its management (e.g. the greater sandhill crane, waterfowl, and shorebirds). Improved habitat for these species will presumptively result in increased populations, which should subsequently result in increased public use and enjoyment of the area.

Cooperation and Community Support

1. and 2. In addition to participation and support from the State at the project site, the *Pit RCD Watershed Management Strategy*, which identifies the project's adjacent locations as restoration priorities, was developed in consultation with a wide range of private stakeholders, in addition to other agencies (i.e., CDFG, NRCS, RWQCB, DWR) and stakeholders (Ducks Unlimited, California Waterfowl Association). During the WMS development process, stakeholders attended meetings, reviewed and wrote text, and provided input on resource issues within the watershed. Some of these adjacent projects were implemented in previous years and can be viewed on the Pit RCD website (see www.pitriverralliance.net/pitrcd). The Pit RCD has also discussed this project and garnered a letter of support from the Modoc and Lassen County Board of Supervisors (see attached), and the design plan has been reviewed by Jim Wilcox (Plumas Corporation), a leader in restoring meadow ecosystems.

3. No significant project opposition has occurred.

4. Local newspaper articles and a newsletter article will be provided to individuals within the RCD and surrounding areas. These articles will credit the Sierra Nevada Conservancy and other funding sources, and describe the Conservancy's role as a state agency. There has been discussion of including the project site as one of the place-based learning "sites" that are used for local education programs, although these discussions are in the early stages and no formal decisions have yet been made.

5. The project is compatible with previous planning projects, including the *Pit RCD Watershed Management Strategy* and the *Upper Pit River Watershed Management Strategy*. Both of these strategies have goals or resource concerns that identify "meadow and stream projects" as important resource topics for their local communities.

6. The project will be communicated using newspaper and newsletter articles, public site tours, and presentations during local RCD, Pit River Watershed Alliance, stakeholder group (e.g. Northeastern California Water Association, Big Valley Pest Abatement District, Lassen/Modoc County Flood Control and Water Efficiency District, and Fall River/Big Valley Cattlemen's Association), and County Board of Supervisor meetings. Finally, the project will be presented at a professional society conference (e.g. Wildlife Society) if the conference is promoting a forum for watershed restoration.

Project Design, Management, and Sustainability

1a. Only one fiscal partner is associated with this project: the Pit Resource Conservation District.

1b. The Pit RCD Watershed Coordinator, who also serves for the Fall River RCD, has actively managed numerous natural resource projects in recent years. Some of these projects are highlighted at <http://pitriveralliance.net/pitracd/> and are summarized in Table 3 below. The Board of Directors, which currently consists of five private landowners in the district, has a broad range of experiences and connections with the local community. The RCD has also developed close relationships with local agency representatives from the Natural Resource Conservation Service, Department of Fish and Game, Department of Water Resources, Regional Water Quality Control Board, U.S. Forest Service, Bureau of Land Management, and the United States Fish and Wildlife Service. Relationships have also been formed with conservation groups such as Ducks Unlimited and the California Waterfowl Association. Because of these relationships and the success of past projects, the landowners in this rural community look to the RCD for assistance with natural resource projects, and view the RCD in a positive manner. The design was prepared by StreamWise, a local consulting firm that was selected by the Pit RCD during a competitive bidding process. StreamWise was also the design consultant and construction manager for other recent projects in the area. These projects have been highly successful at meeting stated project goals. See Table 3 in Attachments for a Summary of Recent Pit River Projects.

1ci. The project site is adjacent to other sites recently identified as part of a larger scale planning process (i.e. *Watershed Management Strategy*) by the Pit RCD. The project is also consistent with the collaborative development of the *Upper Pit River Watershed Management Strategy*.

1cii. The RCD has identified experienced staff and consultants under existing contracts to implement the post-design and construction management portions of this project.

If funded, it is the RCD's intent to contract with Todd Sloat Biological Consulting, Inc. (Sloat Consulting) to serve as watershed coordinator for the proposed project. By doing so, the RCD hopes to maximize the number of people and resources benefited by the project. Mr. Sloat has been the watershed coordinator for the Pit RCD for approximately five years. During this time he has been an effective partner in coordinating activities between landowners, stakeholders, and agency people. Coordination on this scale is vital to preserving the area's watershed, as more than 50% of the land on the area's waterways is owned privately, and in many cases, generationally. Because Mr. Sloat was raised in the area, he has been able to relate to and influence many private landowners in productive and beneficial ways. In addition, he has successfully coordinated and managed several of the RCD's projects.

The RCD also intends to develop contacts with Ducks Unlimited and the California Waterfowl Association for supervision roles related to the construction phase of the project. Both organizations have been involved in past wetland enhancement projects in the area, and have staff familiar with the local landowners and stakeholders.

1ciii. The RCD collaborated with the most qualified available restoration design consultant for this project, in addition to having the project reviewed by Jim Wilcox, Plumas Corporation. The RCD believes that Mr. Wilcox has implemented the greatest number of successful pond and plug projects in the area. This method, when designed and constructed carefully, provides maximum sustainability of low-gradient streams and their associated floodplains. In fact, the Natural Resource Conservation Service recently added this practice to their Standard Practices.

1civ & v. The project will not negatively affect any cultural resources. Initial surveys did not identify cultural resources within the meadow area, but known sites do occur at the meadow margins. Meadow restoration will ultimately protect cultural resources by reducing the amount of lateral erosion that currently exists within the incised stream channel. The project has also been designed to minimize the impact on natural resources by: 1) constructing the project during time periods less critical to wildlife and aquatic species (i.e. non-nesting season); and 2) restoring the channel morphology with natural material to minimize soil disturbance while using existing vegetation in revetment areas. The design consultant has managed the construction of several similar projects and these projects have been successful in meeting project goals similar to those identified in this proposal.

1cvi. The monitoring and maintenance process is outlined below. Little to no maintenance is required when the natural form and function of a stream and floodplain is restored.

Project success will be evaluated with a hydrologic and vegetation surveys.

Hydrologic Success Criteria: The project will be successful if Ash Creek reaches bankfull discharge at a recurrence interval of 1.5 years. It is expected that the groundwater in the meadow area will rise immediately and complete meadow rehydration in 2-3 years. DFG has been monitoring shallow groundwater wells at the site and will continue to do so for at least three years after restoration. Spring and fall monitoring will also consist of a thorough site inspection of terrestrial and aquatic conditions on-site. The inspections will include recording pre and post project photographs and associated notes.

Vegetative Success Criteria: Meadow vegetation is expected to change from a “dry” meadow to a wet meadow condition. This will include establishing and developing a more robust riparian-deciduous shrub (e.g. alder, willow) community. The project will be successful if the riparian-deciduous shrub community increases from its present state by a factor of five. The extent (acreage) of riparian-deciduous shrubs will be measured prior to project construction, and then again at year five. The acreage estimate will be conducted by using GPS to delimit polygons around riparian-deciduous shrubs.

In addition, vegetation transects will be placed perpendicular to the floodplain surface and established along existing cross-sections. The vegetation monitoring protocol is currently being developed, but will likely include a line-intercept method that records species composition and percent cover prior to and after restoration.

2. One of the primary objectives of the restoration techniques employed by this project (i.e., pond and plug) is to return the ecosystem to a self-sustaining condition by restoring the natural form and function of the stream and floodplain surface. In recent years, the natural stream form and function have been restored to several mountain meadow ecosystems using this technique. After the channel form is restored, flood flows will spread across the wide floodplain surface, rather than concentrating within the confines of the gully, thereby restoring the past channel and floodplain connection. Once this natural form of energy dissipation is restored, most of the erosive pressure applied to the bed and banks of the stream are relieved, and the process will be naturally self-sustaining as the historic channel and floodplain change through time with various flood regimes.

The primary factor that can negatively affect the sustainability of the project is livestock management. The State currently operates under a Land Management Plan that is committed to

habitat restoration and enhancement, as evidenced by other projects in which the State owns and manage a wetlands adjacent to the proposed project site.

Plans in the surrounding watershed include agriculture produce and timber management, conducted by the private ranches, farms, and the United States Forest Service. These current activities are not expected to affect the project. No known new projects are planned that are different than current activities that exist adjacent to or within the surrounding area.

3a. The project has a high potential to improve long-term management goals for the ACWA. These goals include improved habitat for waterfowl, shorebirds, greater and lesser sandhill cranes, and the Swainson's hawk. The ACWA also has long-term goals to increase the amount of wetland habitat, including riparian habitat, in the area. All of the vegetation changes expected to result from restoration are consistent with these goals.

3b & c. The principles used to manage the property include a working landscape that is self-sustaining and providing resource benefits for wildlife and people. Primary management activities include control of noxious weeds, water manipulations to create habitat for wildlife, crop production such as grains for wildlife, and haying and grazing in a relatively small acreage area of the Wildlife Area. The project will actually keep the wetland values on-site from further degradation, as about 1,000 acres of meadow habitat is jeopardized by active headcutting and erosion. The redesign of the pipeline and water delivery system will greatly improve management of moist soil wetlands for waterfowl, and the restoration will help control noxious weeds such as Scotch thistle, Dyer's woad, and perennial pepperweed that do not "like" moist soil meadow conditions such expected upon restoration. The ACWA staff will evaluate the changes in habitat conditions and adjust future management practices such as where grazing and haying occur, and where crops may be planted to provide habitat for wildlife. Currently, no changes other than improved water management of existing seasonally managed wetland cells are proposed. Most all of these areas occur at higher elevations than the restoration activities and will not be negatively affected by the project.

3d. The Pit RCD is not aware of complete reference list used by CDFG to manage the ACWA. DFG is actively engaged with local stakeholders and resource specialists in addition to their own staff as evidenced by this proposal.

3f. This project has a unique ability to serve as a "demonstration" project. The integration of the restoration technique and water delivery system for water management and manipulation is largely unprecedented, as very few meadow restoration projects have a water manipulation component. In addition, the pond and plug technique is still relatively "new," and many landowners are not yet familiar with the goals and objectives of the technique. Several landowners in the region will be witness to the project's evolution, beginning with construction activities and ending with the numerous resource benefits that follow construction.

Detailed Budget Form	
State of California - Sierra Nevada Conservancy	
APPLICANT NAME:	Pit Resource Conservation District
SNC REF #:	
PROJECT TITLE:	Lower Ash Creek Wildlife Area Restoration Project

PROJECT TYPE:		Site Improvement				
SECTION ONE DIRECT COSTS		QTY	UNIT*	UNIT COST	SUBTOTAL	SNC Grant Request
Staff/Personnel Expense - Project Related Wages/Benefits						
Pit RCD Business Manager		1920	hrs	\$30.00	\$57,600	
TOTAL:					\$57,600	
Travel/Meeting Expense - Project Related						
		10000	miles	\$0.50	\$5,000	
TOTAL:					\$5,000	
Contracts/Consultants - Project Related						
Project management		394	hrs	\$100.00	\$39,400	
Coordination		346	hrs	\$100.00	\$34,600	
Pre-const. Archeology		400	hrs	\$100.00	\$40,000	
Pre-const. botany		200	hrs	\$100.00	\$20,000	
Construction Supervision		856	hrs	\$105.00	\$89,880	
Constr. - revetement/grading		800	hrs	\$150.00	\$120,000	
Design, supervision pipeline		400	hrs	\$100.00	\$40,000	
Construction - pipeline		12000	feet	\$21.25	\$255,000	
Construction-Earthwork		5630	yd ³	\$4.00	\$2,252,000	1,000,000
TOTAL:					\$2,890,880	\$1,000,000
Materials/Supplies - Project Related						
rock		50	yd ³	\$100.00	\$5,000.00	
pipeline		12000	feet	63.75	\$765,000	
TOTAL:					\$770,000	
Equipment Use Expenses - Project Related Rental/Insurance/Maintenance/Fuel						
rental		150	days	\$200.00	\$30,000	
TOTAL:					\$30,000	
Equipment Leases/Purchases - Project Dependent						
TOTAL:					\$0.00	
Fees - Appraisal/Permits/CEQA/Easement						
TOTAL:					\$0.00	
DIRECT COSTS SUBTOTAL:					\$3,753,480	\$1,000,000
SECTION TWO INDIRECT COSTS		QTY	UNIT*	UNIT COST	SUBTOTAL	SNC Grant Request
Staff/Personnel Expense - Wages/Benefits/Consultants/Contract Labor						

Workers Compensation	2	yr.	\$1,000	\$2,000	
TOTAL:				\$2,000	
Printed Materials - Project related Publications/Communications/Public Outreach					
postage newsletters	1800	ea.	\$0.50	\$900	
printing-posters	10	ea.	\$50.00	\$500	
printing newsletters	1200	ea.	\$1.00	\$1,200	
office supplies	2	yr.	\$1,000	\$2,000	
TOTAL:				\$4,600	
Outreach/Education - Trainers fees/ facilitators/Facility Expense					
Monitoring/outreach	100	hrs	\$100.00	\$10,000	
TOTAL:				\$10,000	
Equipment Use Expenses - Insurance/Registrations/Maintenance/Rental					
TOTAL:				\$0.00	
Performance Measure reporting					
	100	hrs.	\$100.00	\$10,000	
				\$0.00	
OTHER TOTAL:				\$10,000	
MAINTENANCE SUBTOTAL:				\$0.00	
PROJECT TOTAL:				\$24,600	\$1,000,000
SECTION THREE					
Administrative Costs (Description - Not to exceed 15% of Project Total):					
phone	48	mo.	\$100.00	\$4,800	
rent	6	mo.	\$300.00	\$1,800	
audits	2	yr.	\$1,000.00	\$2,000	
insurance	2	yr.	\$400.00	\$800	
electricity and water	24	mo.	\$100.00	\$2,400	
ADMINISTRATIVE TOTAL:				\$11,800	
PROJECT TOTAL / SNC TOTAL GRANT REQUEST:				\$3,789,880	\$1,000,000
SECTION FOUR OTHER PROJECT CONTRIBUTIONS	QTY	UNIT*	UNIT COST	Contribution	Status**
National Fish and wildlife Foundation				\$100,000	committed
SNC				\$48,600	spent
DFG - cash				\$3,715	spent
DFG and RCD in-kind	1440	hrs	50	\$72,000	committed
Dept. of Conservation	150	hrs	40	\$6,000	spent
Total Other Contributions:				\$230,315	

ATTACHMENTS.

Table 1. Tasks, Schedule, and Constraining Factors

Tasks	Schedule	Constraining Factors
1. Administration	Life of grant	None
2. Post Design, Pre-Construction	March 2010 – July 2010	Receiving bids within the construction budget and timeline
3. Construction	July 20 10 – October 2010	Wet weather, contractor quits
4. Reports, Monitoring, Outreach	July 10 – March 2012	None

TABLE 3. Summary of Recent Pit RCD Projects and Projects Coordinated by their Watershed Coordinator

Project	Project Type	Schedule	Primary Funds and Value	Reference
Big Bear Flat Meadow Restoration Project	Meadow Restoration (pond and plug technique)	Completed in fall 2009	ARRA-USFWS (\$435,000); USFS Partners (46,000)	Sheli Wingo, USFWS, 530-257-3043
Rose Canyon Creek Restoration	Meadow Restoration (pond and plug technique)	Completed in October 2007	319(h) \$5,000; Modoc RAC \$63,000; REMF \$29,120; NFF \$7,600; USFWS \$25,000; Prop 13 \$47,000; NRCS \$15,000	Lookout Stock Association, Bob Shaw 520-294-5357
Twin Pines Ranch Project	Habitat enhancement	Completed in October 2006	319(h) \$10,000; USFWS \$17,700; NRCS \$30,525	Mark and Ida Higgins, 530-299-3259
Shaw Ranch – Pit River stabilization project	Streambank stabilization and habitat enhancement (rock vanes, bank resloping, vegetation planting)	Constructed in October 2005 and 2006	319(h) \$50,250; Prop 13 \$69,200	Don Lindsey, 530-299-5554
Dutch Flat and North Fork Ash Creek Restoration	Pond and plug, and inset floodplain habitat	Constructed in July 2007 and June 2008	319(h) \$79,000	Tom and Kathy DeForest, 530-299-3464

	improvement project			
Pit RCD Watershed Management Strategy	Planning project	Completed in December 2006	319(h) \$10,000; Prop 13 \$12,500	Dennis Heiman, 530-224-4851
Ash Valley Ranch Project	Off-site watering facility	Completed Fall of 2006	319(h) \$7,500; Prop 13 \$10,200	Tom Esgate, 530-432-4153

From Chris Hammersmark: Groundwater effect on riparian ecosystem recovery

CONCLUSION

Hydrology is the primary driver of the establishment and persistence of wetlands (Mitsch and Gosselink 2000). Natural flow regimes (Poff et al. 1997) and multidimensional connectivity (Ward and Stanford 1995, Stanford et al. 1996) have been identified as key determinants in the ecology of river-riparian systems. Moreover, hydrology is so crucial that a National Research Council report on the management of riparian areas states that "repairing the hydrology of the system is the most important element of riparian restoration" (National Research Council 2002). The restoration of the meadow channel studied here resulted in the restoration of shallow groundwater levels. The project also resulted in the restoration of the natural flow regime and channel-floodplain connectivity, primarily reflected in the increased frequency and duration of floodplain inundation. These changes to the physical attributes of the system are having and will continue to have profound effects upon the ecology of the meadow (Hammersmark et al. in prep.).

When discussing carbon sequestration, it is important to consider the role of healthy wetlands and riparian vegetation in binding carbon within the flora of the meadows. Acre for acre, healthy wetland vegetation is a more effective carbon filtration system than a mature conifer forest. Consider the following excerpt from a wetlands conference in Brazil.

Destruction of wetlands worsens global warming

mongabay.com

July 20, 2008

Destruction of wetland ecosystems will generate massive greenhouse gas emissions in coming years, warn experts convening at an international wetlands conference in Brazil.

While they cover only 6 percent of the world's surface, wetlands — marshes, peat bogs, swamps, river deltas, mangroves, tundra, lagoons and river floodplains — are estimated to hold 771 gigatons of greenhouse gases, or 10-20 percent of the globe's terrestrial carbon. Beyond carbon storage, wetlands provide a range of environmental services, including water filtration and storage, erosion control, a buffer against flooding, nutrient recycling, biodiversity maintenance, and a nursery for fisheries. But drainage and destruction of these ecosystems is responsible for large amounts of carbon emissions (40 tons of carbon per hectare per year for drained tropical swamp forests) as well as degradation of the other services they provide.

"Too often in the past, people have unwittingly considered wetlands to be problems in need of a solution," said UN Under Secretary-General Konrad Osterwalder, a conference organizer. "Yet wetlands are essential to the planet's health — and with hindsight, the problems in reality have turned out to be the draining of wetlands and other 'solutions' we humans devised."

A recent study estimated the economic value of flood prevention and other ecological services provided by wetlands at \$15,000 per hectare per year, a sum greater than any other ecosystem — seven times that of the next most valuable, tropical rainforests.

Detailed Budget Form					
State of California - Sierra Nevada Conservancy					
APPLICANT NAME: Pit Resource Conservation District					
SNC REF #:					
PROJECT TITLE: Lower Ash Creek Wildlife Area Restoration Project					
PROJECT TYPE (choose one):					
<input type="checkbox"/> ACQUISITION <input checked="" type="checkbox"/> SITE IMPROVEMENT <input type="checkbox"/> RESTORATION <input type="checkbox"/> PRE PROJECT PLANNING					
SECTION ONE DIRECT COSTS	QTY	UNIT*	UNIT COST	SUBTOTAL	SNC Grant Request
Staff/Personnel Expense - Project Related Wages/Benefits					
Pit RCD Business Manager	1920	hrs	\$30.00	\$57,600.00	
				\$0.00	
TOTAL:				\$57,600.00	
Travel/Meeting Expense - Project Related					
	10000	miles	\$0.50	\$5,000.00	
				\$0.00	
TOTAL:				\$5,000.00	
Contracts/Consultants - Project Related					
Project management	394	hrs	\$100.00	\$39,400.00	
Coordination	346	hrs	\$100.00	\$34,600.00	
Pre-const. Archeology	400	hrs	\$100.00	\$40,000.00	
Pre-const. botany	200	hrs	\$100.00	\$20,000.00	
Construction Supervision	856	hrs	\$105.00	\$89,880.00	
Constr. - revetement/grading	800	hrs	\$150.00	\$120,000.00	
Design, supervision pipeline	400	hrs	\$100.00	\$40,000.00	
Construction - pipeline	12000	feet	\$21.25	\$255,000.00	
Construction-Earthwork	563000	yd ³	\$4.00	\$2,252,000.00	
TOTAL:				\$2,890,880.00	\$1,000,000.00
Materials/Supplies - Project Related					
rock	50	yd ³	\$100.00	\$5,000.00	
pipeline	12000	feet	63.75	\$765,000.00	
				\$0.00	
TOTAL:				\$770,000.00	
Equipment Use Expenses - Project Related Rental/Insurance/Maintenance/Fuel					
rental	150	days	\$200.00	\$30,000.00	
				\$0.00	
TOTAL:				\$30,000.00	
Equipment Leases/Purchases - Project Dependent					
	0		\$0.00	\$0.00	
				\$0.00	
TOTAL:				\$0.00	\$0.00
Fees - Appraisal/Permits/CEQA/Easement					
	0		\$0.00	\$0.00	
TOTAL:				\$0.00	\$0.00
DIRECT COSTS SUBTOTAL:				\$3,753,480.00	\$1,000,000.00
SECTION TWO INDIRECT COSTS	QTY	UNIT*	UNIT COST	SUBTOTAL	SNC Grant Request
Staff/Personnel Expense - Wages/Benefits/Consultants/Contract Labor					
Workers Compensation	2	yr.	\$1,000.00	\$2,000.00	
				\$0.00	
TOTAL:				\$2,000.00	
Printed Materials - Project related Publications/Communications/Public Outreach					
postage newsletters	1800	ea.	\$0.50	\$900.00	
printing-posters	10	ea.	\$50.00	\$500.00	
printing newsletters	1200	ea.	\$1.00	\$1,200.00	
office supplies	2	yr.	\$1,000.00	\$2,000.00	
				\$0.00	
TOTAL:				\$4,600.00	
Outreach/Education - Trainers fees/ facilitators/Facility Expense					
Monitoring/outreach	100	hrs	\$100.00	\$10,000.00	

				\$0.00	
TOTAL:				\$10,000.00	
Equipment Use Expenses - Insurance/Registrations/Maintenance/Rental					
	0			\$0.00	
TOTAL:				\$0.00	\$0.00
Performance Measure reporting					
	100	hrs.	\$100.00	\$10,000.00	
				\$0.00	
OTHER TOTAL:				\$10,000.00	\$0.00
MAINTENANCE SUBTOTAL:				\$0.00	\$0.00
PROJECT TOTAL:				\$24,600.00	
SECTION THREE					
Administrative Costs (Description - Not to exceed 15% of Project Total):					
phone	48	mo.	\$100.00	\$4,800.00	
rent	6	mo.	\$300.00	\$1,800.00	
audits	2	yr.	\$1,000.00	\$2,000.00	
insurance	2	yr.	\$400.00	\$800.00	
electricity and water	24	mo.	\$100.00	\$2,400.00	
ADMINISTRATIVE TOTAL:				\$11,800.00	
PROJECT AND SNC TOTAL GRANT REQUEST:				\$3,789,880.00	\$1,000,000.00

*Unit: Enter the appropriate unit of measure (e.g., hours = hrs., months = mos., each = ea., feet = ft., miles = mi., miscellaneous = misc., package = pkg.)

Project Budget Details							
State of California - Sierra Nevada Conservancy							
APPLICANT NAME:							
SNC REF #:							
PROJECT TITLE							
PROJECT TYPE (choose one):							
<input type="checkbox"/>	ACQUISITION	<input type="checkbox"/>	SITE IMPROVEMENT	<input checked="" type="checkbox"/>	RESTORATION	<input type="checkbox"/>	PRE PROJECT PLANNING
SECTION FOUR							
OTHER PROJECT CONTRIBUTIONS	QTY	UNIT*	UNIT COST	Contribution	Status**		
List other funding or in-kind contributors to project							
(i.e. Sierra Business Council, Department of Water Resources, etc.)							
National Fish and wildlife Foundation				\$100,000.00	verbally committed		
SNC				\$48,600.00	spent		
DFG - cash				\$3,715.00	spent		
DFG and RCD in-kind	1440	hrs	50	\$72,000.00			
Dept. of Conservation	150	hrs	40	\$6,000.00			
				\$0.00			
Total Other Contributions:				\$230,315.00			

10. PERFORMANCE MEASURES

Performance Measures (PM) that will be documented as part of the project include PM 1-4, PM6 (linear feet of streambank protected/restored), and PM 13 (acres of land restored/improved). Also, direct measurements are proposed to document PM 12 (acre feet of water supply conserved). No direct measurements are proposed for PM 14, although the project will affect this resource topic in a positive manner as described below.

PM 12 and PM 14. Acre Feet of Water Supply Conserved or Enhanced / Cubic Feet per Second of Streamflow Improved

We are fortunate to have access to an excellent body of work regarding the interaction of groundwater storage following stream restoration work. This information was collected from the “pond and plug” restoration technique and techniques similar to this approach. The most closely associated studies to this study area have taken place on Bear Creek in Shasta County, where UC Davis graduate researchers studied these effects following the 1999 restoration work along 2.2 miles of stream channel. The pond and plug project restored the historic channel / floodplain connection and enhanced groundwater storage in a 500-acre meadow.

Attached below is an excerpt from the Hammersmark paper. The chart indicates an increase in groundwater elevation of over six feet in some areas, especially during spring when flood flows have been restored to the meadow surface.

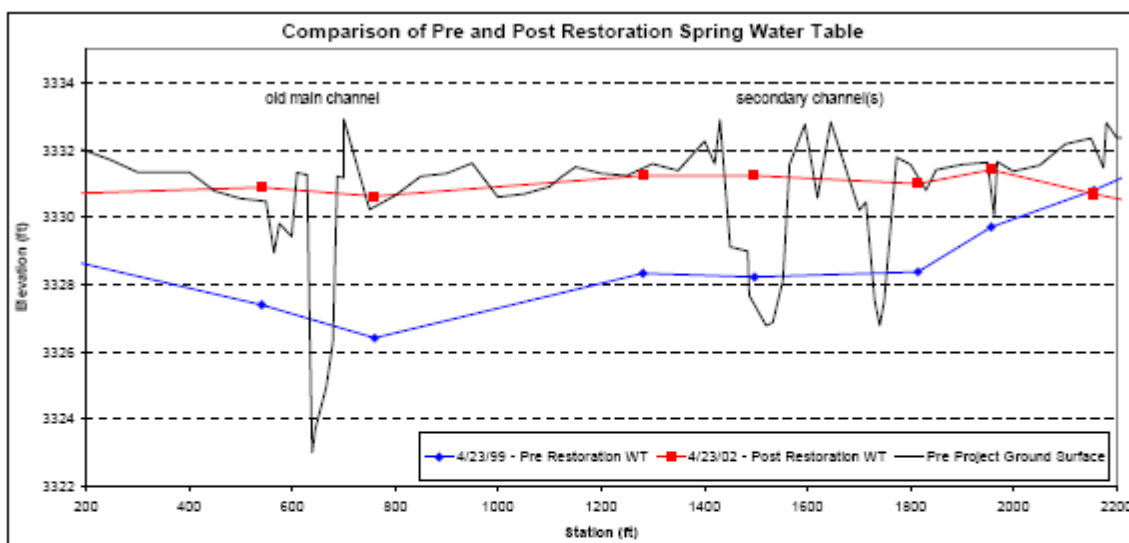


Figure 8 – Comparison of pre- (blue line) and post-restoration (red line) water table elevations in late April for ground water transect B. Transect B traverses the valley roughly half way down the meadow. The pre-restoration ground surface is provided to show the locations of old main channel and secondary channels, in addition to allowing the comparison of the restoration’s influence on the depth to the water table. Note that the pre-restoration water table slopes toward the old main channel, as it acted as a drain for the meadow’s ground water.

To clarify the effects of meadow restoration on the timing of groundwater release, we can refer to the following chart, also from the Hammersmark paper on the Bear Creek Restoration Project:

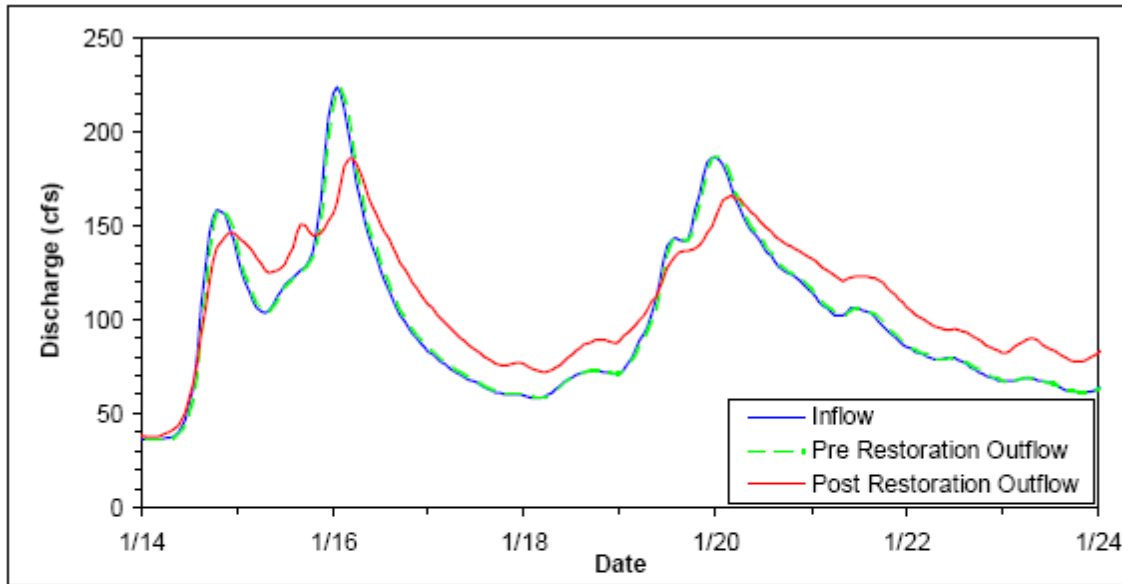


Figure 7 – Preliminary hydraulic modeling results reveal the effect of the channel restoration on the movement of several flood pulses through the meadow. In the pre-project incised condition (green dashed line) each flood pulse travels through the meadow relatively unchanged. In this case the meadow outflow (green dashed line) is very similar to the meadow inflow (blue solid line). Due to a lack of floodplain connectivity in the incised condition, flood peaks maintain their magnitude and travel through the meadow rather quickly. In the post-project, restored condition, significant attenuation and peak reduction are observed in the meadow outflow (red solid line). As water leaves the main channel and inundates the floodplain, it is slowed and temporarily stored. While some of this water flows back to the channel downstream after flowing across the floodplain, some of the water infiltrates into the meadow surface and recharges the shallow water table.

The two charts above indicate that restoration of the channel/floodplain connection has a pronounced effect on both the storage capacity and timing of return flows to the restored channel. During the research, the quantity of water stored within the meadow was calculated, based on modeling of groundwater interchange following restoration. These quantities are not directly applicable to the project site due to variations in overbank flow, meadow size, soil type, meadow slope, and other variables. For this reason, we will not attempt to extrapolate quantitative measurements of groundwater storage or cubic feet per second of return flow to the project site.

However, the data above does support the conclusion that restoration of the historic channel/floodplain connection is capable of enhancing significant groundwater storage, buffering the peak discharge during runoff events, and gradually releasing stored groundwater to the system following peak flows.

Detailed information can be found within the Laymans Report titled, GEOMORPHIC, HYDROLOGIC AND ECOLOGICAL EFFECTS OF THE BEAR CREEK MEADOW RESTORATION PROJECT: A LAYMAN'S REVIEW, CHRISTOPHER T. HAMMERMARK & JEFFREY F. MOUNT, NOVEMBER 15, 2005

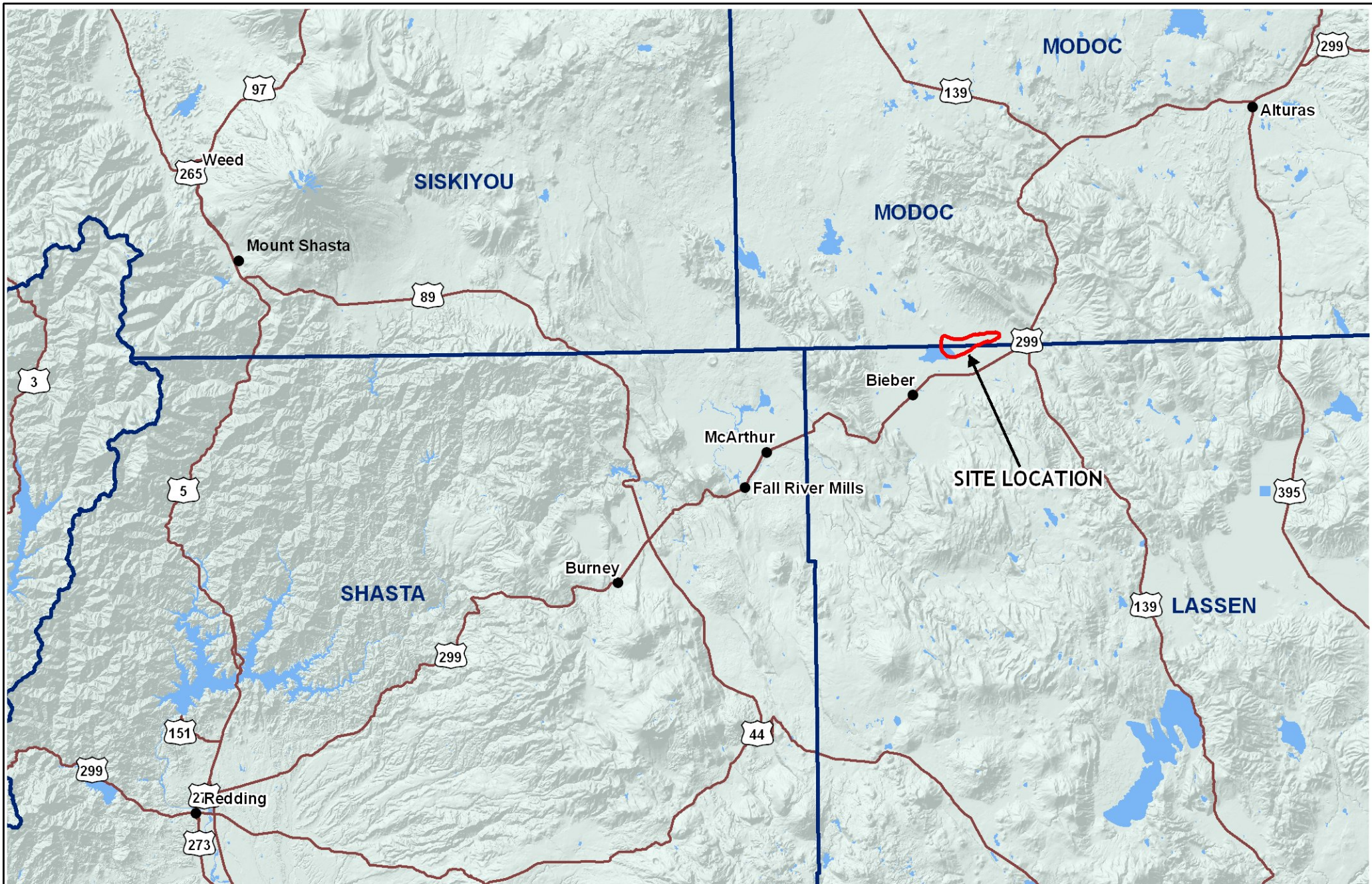
ENVIRONEMENTAL SETTING AND IMPACTS

The proposed project is located in the lower reaches of Ash Creek on lands owned and managed by the State of California, Modoc and Lassen County. The area consists of springs, creek channel, meadow, and surrounding sagebrush scrub. The stream and meadow within the project has become entrenched, while other portions were channelized prior to purchase by the state.

The primary landform feature of the project site is a dehydrated middle-elevation (4,100 feet) meadow. Historically, this ecosystem featured saturated hydric meadow soils and fen-like mats of floating vegetation. Channel incision and channelization has and continues to lead to lowered channel base elevations and subsequent channel widening. This has effectively drained 2,415 acres of the meadow and threatens another 1,085 acres of meadow.

Biological and cultural resource surveys were conducted as part of the planning and design process and impacts on them will be avoided. The area is used by the nesting greater sandhill crane (State Threatened) and the Swainson's Hawk (State Threatened) as well as thousands of waterfowl and shorebirds, particularly during the spring staging time period (March – April). In addition, several special-status species are known to occur on the project site, and prehistoric cultural sites are known to exist in the margins of the historic meadow. The project will be constructed at a time (late summer) to avoid impacts on any known wildlife species (e.g. greater sandhill cranes, Swainson's hawk). Sensitive plant populations within the project area will be identified and mitigation measures will be implemented to minimize impacts on these sensitive species (e.g. collect seed and/or plants for propagation in other areas). Construction operators will be informed as to the location of all sensitive resources so the appropriate mitigation measures can be applied.

Construction methods include the operation of dirt moving machinery (e.g. excavator, scrapper, loaders) to remove soil adjacent to the gully (creating ponds), and to relocate it to other portions of the gully (creating "plugs"). Disturbance area associated with these activities has been calculated at 150 acres. Water entering into the east portion of the project will be redirected into a remnant channel by building the first plug at an elevation and location slightly above that of the design channel. The first plug creates a pond immediately upstream, and two water control structures will be installed. These structures will connect to two pipelines, one traversing to the northwest and the other to the southwest, which will eventually parallel the floodplain margin. A large water diversion structure that exists just east of County Road 87A will be removed, and County Road 87A will be reconstructed to function as a low-water or dry season water crossing.



 Ash Creek Wildlife Area Project Location

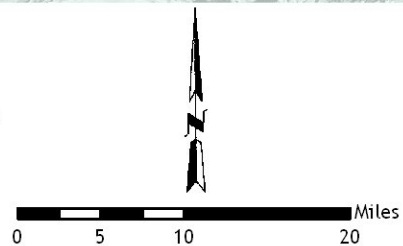


FIGURE 1
GENERAL SITE LOCATION
ASH CREEK WILDLIFE AREA
RESTORATION PROJECT

PROJECT LOCATION MAP *(see following pages)*

Parcel Map with County Assessor's Parcel Number(s) noted *(see following pages)*

TOPOGRAPHIC MAP *(see following pages)*

SITE PLAN *(see following pages)*

PHOTOS OF PROJECT SITE *(see following pages)*

LAND TENURE

The State of California, Dept. of Fish and Game manages and control access to the project site.

LEASES OR AGREEMENTS

There are no leases or agreements affecting project lands or the future operation and maintenance thereof. The project has been designed to maintain and improve the States existing agreements to deliver water to downstream users.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

The Pit RCD and CDFG prepared an Initial Study Negative Declaration with the help of a consultant and this document was filed with the State Clearinghouse on June 24, 2010. The DFG field a Notice of Determination to the Clearinghouse on August 17, 2010. See Appendix A for CEQA compliance information

NATIONL ENVIRONMENTAL POLICY ACT COMPLIANCE

There is no federal nexus for this project and therefore it is not subject to NEPA.

REGULATORY REQUIREMENTS

The following permits or notifications were conducted in order to begin construction on the proposed restoration project: See Appendix B for compliance documentation.

Permit / Document	Permitting Agency and Contact Information	Status
Notification; CWA Sec. 404, Nation Wide 27	Army Corps of Engineers, Matt Kelley, 530-223-9534	As required by the NW 27 guidelines, DFG will file 60-days prior to construction activities; to date, this project has not yet been filed with the ACOE, and will not be until implementation funds are secured. However, the appropriate information has been prepared for the notification (See Appendix B)

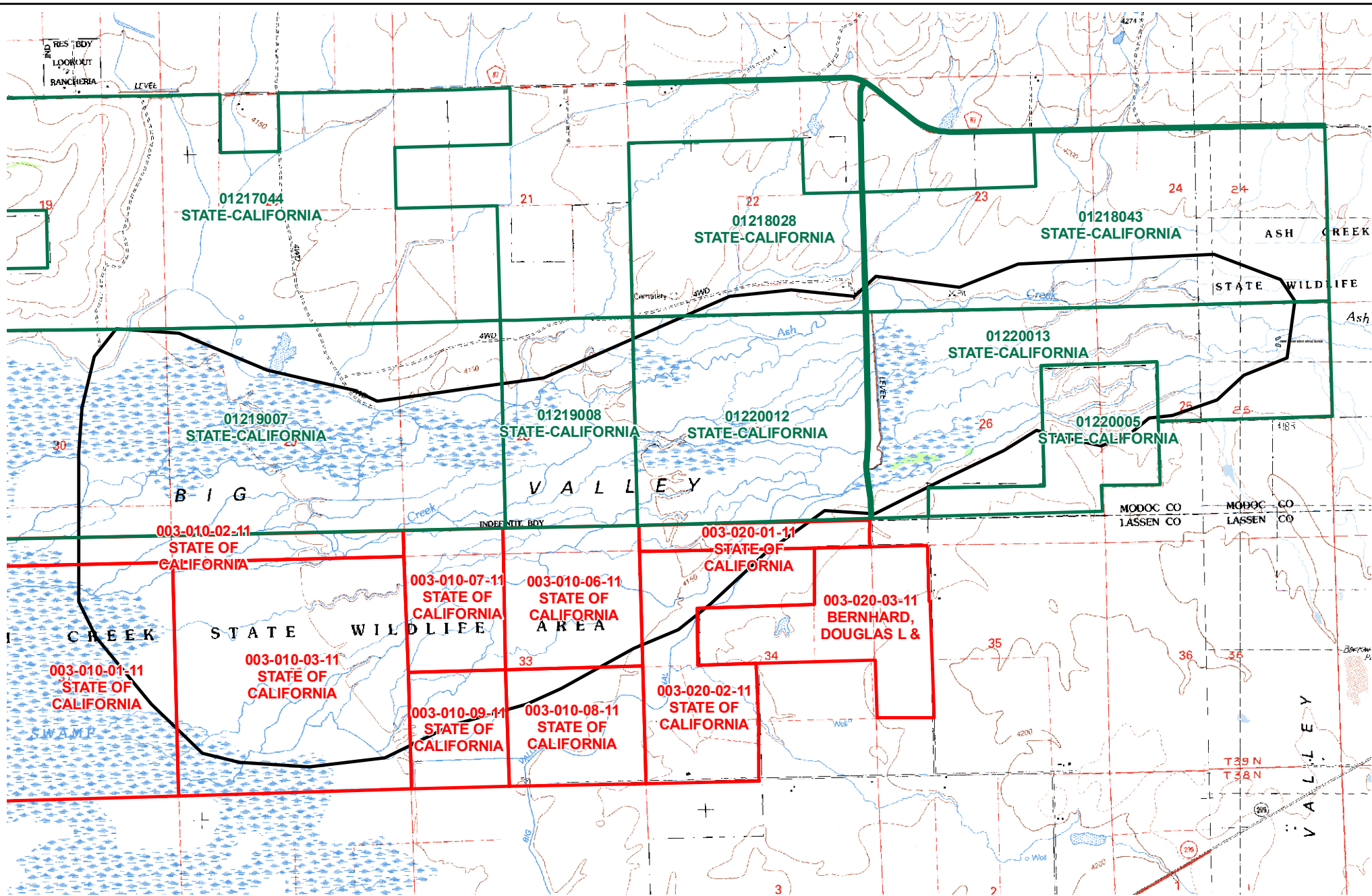
Notice of Lake or Streambed Alteration	California Department of Fish and Game, Kim Burns, 530-335-2367	The SAA has been prepared and filed with DFG. DFG has conducted the site visit and responded (see Appendix B).
Section 7 Consultation	USFWS	No Federal Candidate, Threatened, or Endangered Species occur on-site; nor does the project site fall within critical habitat for any federal T&E species. The project will have no effect.
401 Water Quality Certification	RWQCB, Guy Chetelat, 530-224-4997, gchetelat@waterboards.ca.gov	401 Certification has been filed and a Waiver has been issued to the Pit RCD (see Appendix B).

DEMONSTRATION OF SUPPORT

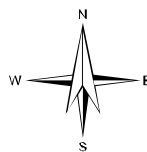
See below support letters

APPENDIX A. CEQA COMPLIANCE DOCUMENTATION

APPENDIX B. OTHER PERMIT COMPLIANCE DOCUMENTATION

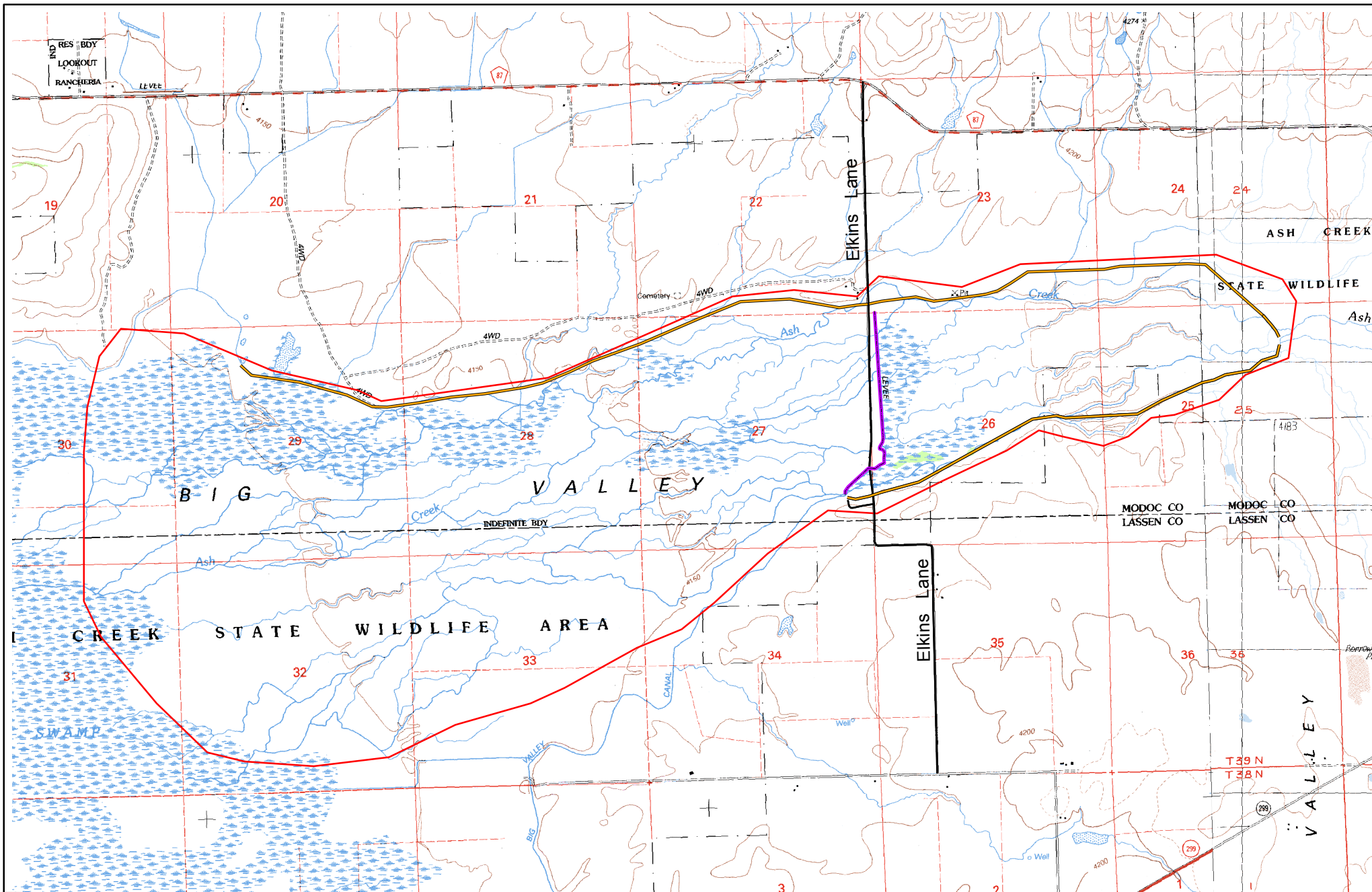



- Modoc County Parcel Boundary
- Lassen County Parcel Boundary
- Ash Creek Wildlife Area



0 0.25 0.5 1 Miles

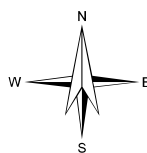
LANDOWNER BOUNDARIES
ASH CREEK WILDLIFE AREA
RESTORATION PROJECT



 Area of Potential Effect

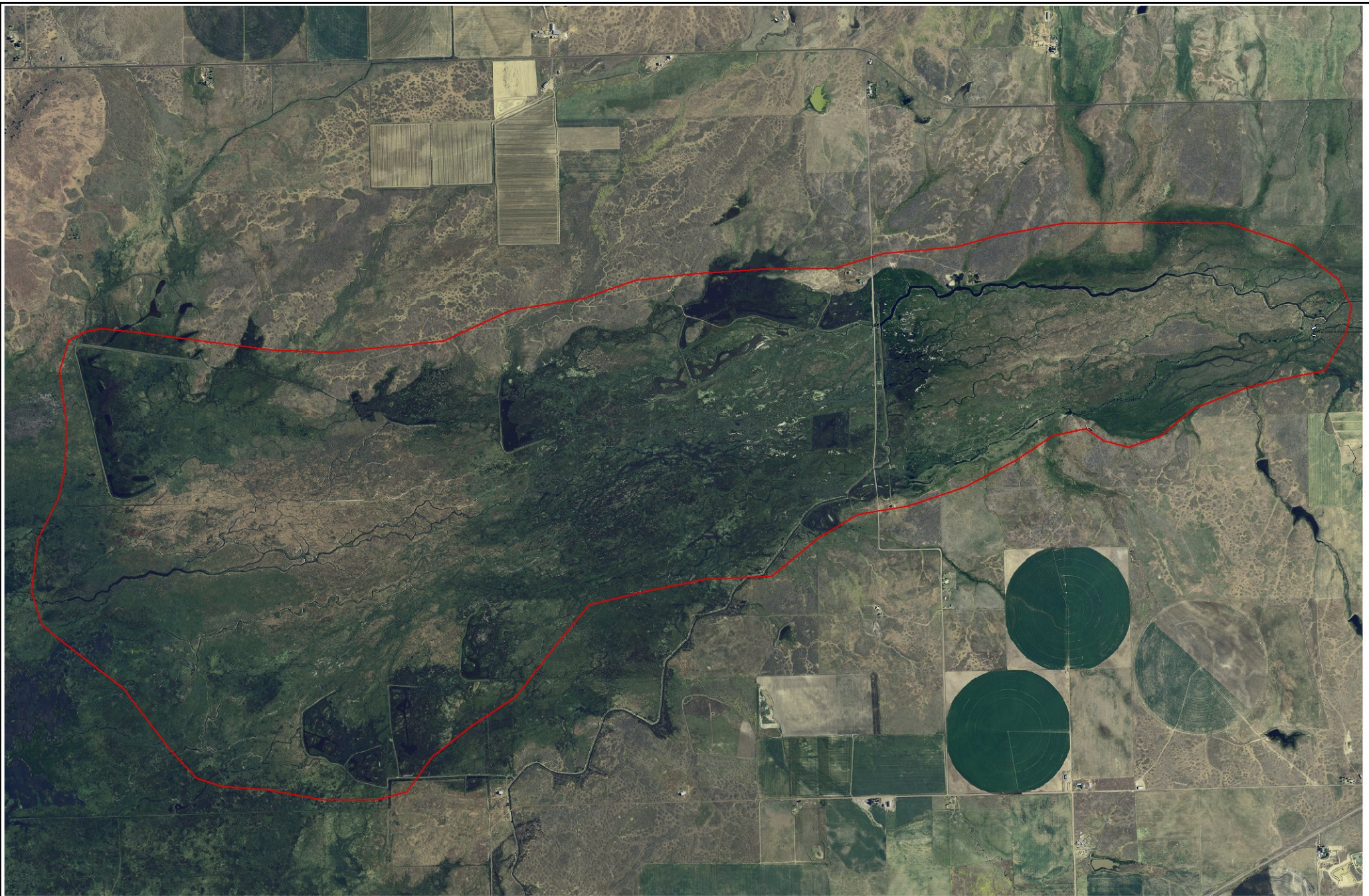
 Levee

 Pipelines



0 0.25 0.5 1 Miles

**AREA OF POTENTIAL EFFECT
ASH CREEK WILDLIFE AREA
RESTORATION PROJECT**



 Project Area

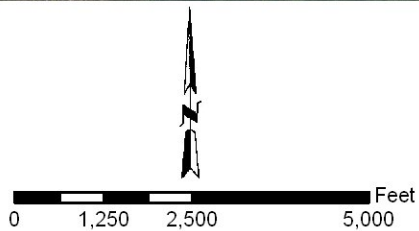
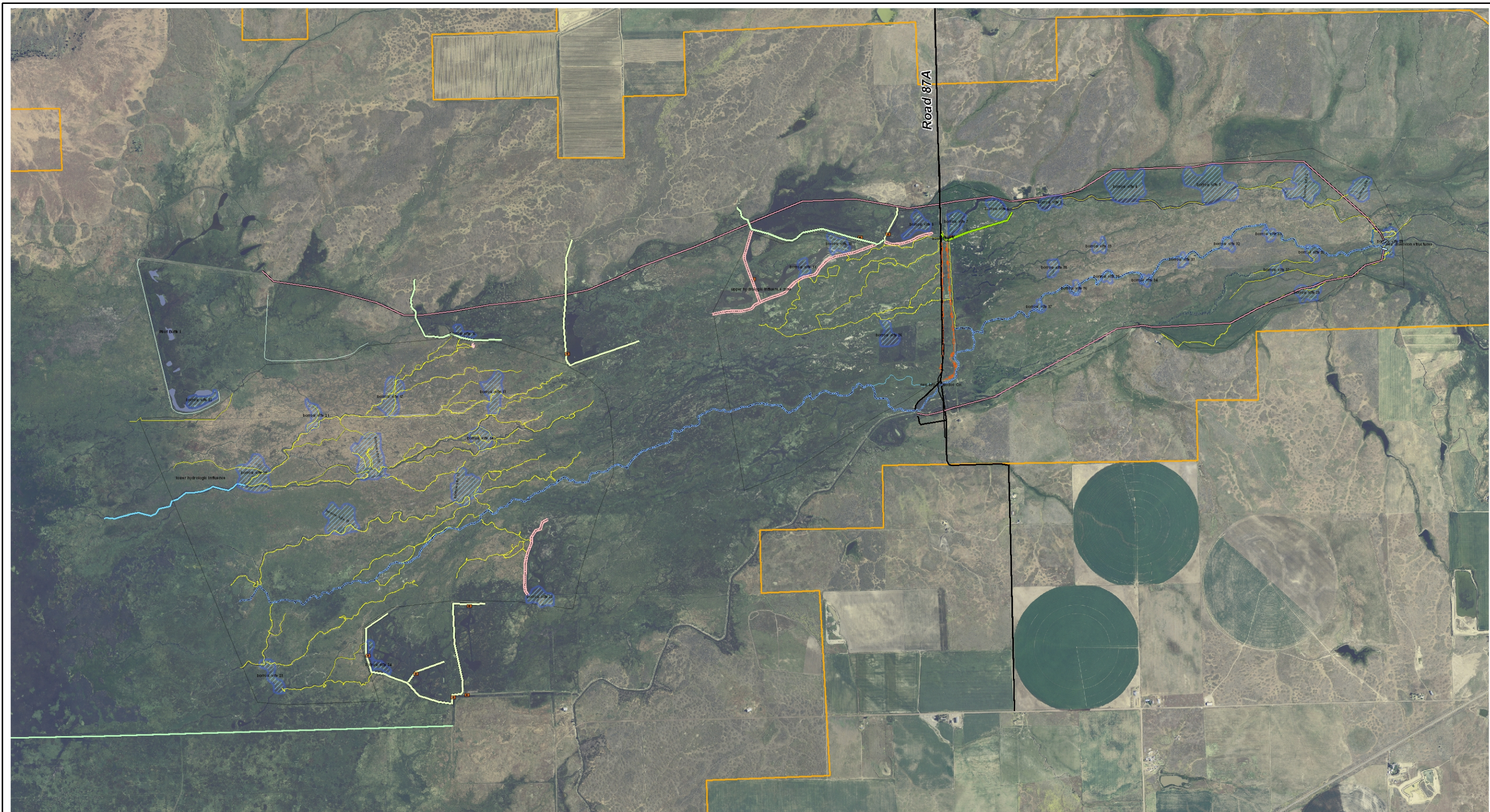


FIGURE 2
PROJECT AREA
ASH CREEK WILDLIFE AREA
RESTORATION PROJECT



- | | | | | |
|----------------|------------|---------------------------|-------------------------|------------------------|
| Outflow | gully-fill | new irrig. pipe | gully-fill | wetland |
| altern. design | levee | grade to floodplain elev. | remove berm | exstng open water |
| design channel | main road | wetland influence zone | Ash Creek Wildlife Area | Open Water Borrow Site |
| grade / remove | new berm | existing berm | hydrologic infl zone | exstng open water |

0 1,000 2,000 4,000 Feet



FIGURE 3
PROJECT DETAILS
ASH CREEK WILDLIFE AREA
MODOC AND LASSEN COUNTIES



Entrenched portions of Ash Creek



Most upstream end of project. This is the existing water diversion structure that has been redesigned.



Historic culverts within the creek suggest the creek was much smaller at the time they were installed.



This remnant channel to the left of the gully is probably about the correct "size."



An existing riparian area is present at the upper end of the project. This area is expected to improve after restoration.



This new gully appears to have occurred recently as flows “captured” some linear feature.



Many channels within Ash Creek show highly unstable channel conditions.



The central portion of the project area is in stable condition but is threatened by active headcuts working toward this area.



California Regional Water Quality Control Board Central Valley Region

Katherine Hart, Chair

Linda S. Adams
Secretary for
Environmental
Protection

415 Knollcrest Drive, Suite 100, Redding, California 96002
(530) 224-4845 • Fax (530) 224-4857



Arnold
Schwarzenegger
Governor

9 September 2010

Mr. Todd Sloat
Pit Resource Conservation District
P.O. Box 301
Adin, CA 96006

CLEAN WATER ACT §401 TECHNICALLY CONDITIONED WATER QUALITY CERTIFICATION FOR DISCHARGE OF DREDGED AND/OR FILL MATERIALS FOR THE LOWER ASH CREEK WILDLIFE RESTORATION PROJECT (WDID#5A25CR00041), ADIN, MODOC COUNTY

ACTION:

1. ☐ Order for Standard Certification
2. ☒ Order for Technically-conditioned Certification
3. ☐ Order for Denial of Certification

WATER QUALITY CERTIFICATION STANDARD CONDITIONS:

1. This certification action is subject to modification or revocation upon administrative or judicial review, including review and amendment pursuant to §13330 of the California Water Code and §3867 of Title 23 of the California Code of Regulations (23 CCR).
2. This certification action is not intended and shall not be construed to apply to any discharge from any activity involving a hydroelectric facility requiring a Federal Energy Regulatory Commission (FERC) license or an amendment to a FERC license unless the pertinent certification application was filed pursuant to 23 CCR subsection 3855(b) and the application specifically identified that a FERC license or amendment to a FERC license for a hydroelectric facility was being sought.
3. The validity of any non-denial certification action shall be conditioned upon total payment of the full fee required under 23 CCR §3833, unless otherwise stated in writing by the certifying agency.
4. Certification is valid for the duration of the described project. Pit Resource Conservation District shall notify the Central Valley Water Board in writing within 7 days of project completion.

ADDITIONAL TECHNICALLY CONDITIONED CERTIFICATION CONDITIONS:

In addition to the four standard conditions, Pit Resource Conservation District shall satisfy the following:

1. Pit Resource Conservation District shall notify the Central Valley Water Board in writing 7 days in advance of the start of any in-water activities.
2. Except for activities permitted by the U.S. Army Corps under §404 of the Clean Water Act, soil, silt, or other organic materials shall not be placed where such materials could pass into surface water or surface water drainage courses.
3. All areas disturbed by project activities shall be protected from washout or erosion.
4. Pit Resource Conservation District shall maintain a copy of this Certification and supporting documentation (Project Information Sheet) at the Project site during construction for review by site personnel and agencies. All personnel (employees, contractors, and subcontractors) performing work on the proposed project shall be adequately informed and trained regarding the conditions of this Certification.
5. An effective combination of erosion and sediment control Best Management Practices (BMPs) must be implemented and adequately working during all phases of construction.
6. All temporarily affected areas will be restored to pre-construction contours and conditions upon completion of construction activities.
7. Pit Resource Conservation District shall perform surface water sampling: 1) When performing any in-water work; 2) In the event that project activities result in any materials reaching surface waters or; 3) When any activities result in the creation of a visible plume in surface waters. The following monitoring shall be conducted immediately upstream out of the influence of the project and 300 feet downstream of the active work area. Sampling results shall be submitted to this office within two weeks of initiation of sampling and every two weeks thereafter. The sampling frequency may be modified for certain projects with written permission from the Central Valley Water Board.

Parameter	Unit	Type of Sample	Frequency of Sample
Turbidity	NTU	Grab	Every 4 hours during in water work
Visible construction related pollutants	Observations	Visible Inspections	Continuous throughout the construction period

8. Activities shall not cause turbidity increases in surface water to exceed:
- (a) where natural turbidity is less than 1 Nephelometric Turbidity Units (NTUs), controllable factors shall not cause downstream turbidity to exceed 2 NTU;
 - (b) where natural turbidity is between 1 and 5 NTUs, increases shall not exceed 1 NTU;
 - (c) where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20 percent;
 - (d) where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTUs;
 - (e) where natural turbidity is greater than 100 NTUs, increases shall not exceed 10 percent.

Except that these limits will be eased during in-water working periods to allow a turbidity increase of 15 NTU over background turbidity as measured in surface waters 300 feet downstream from the working area. In determining compliance with the above limits, appropriate averaging periods may be applied provided that beneficial uses will be fully protected. Averaging periods may only be assessed by prior permission of the Central Valley Water Board.

9. Activities shall not cause settleable matter to exceed 0.1 ml/l in surface waters 300 feet downstream from the project.
10. The discharge of petroleum products or other excavated materials to surface water is prohibited. Activities shall not cause visible oil, grease, or foam in the work area or downstream. Pit Resource Conservation District shall notify the Central Valley Water Board immediately of any spill of petroleum products or other organic or earthen materials.
11. Pit Resource Conservation District shall notify the Central Valley Water Board immediately if the above criteria for turbidity, settleable matter, oil/grease, or foam are exceeded.
12. Pit Resource Conservation District shall comply with all Department of Fish and Game 1600 requirements for the project.
13. Pit Resource Conservation District must obtain coverage under the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities issued by the State Water Resources Control Board for any project disturbing an area of 1 acre or greater.
14. The Conditions in this water quality certification are based on the information in the attached "Project Information." If the information in the attached Project Information is modified or the project changes, this water quality certification is no longer valid until amended by the Central Valley Water Board.
15. In the event of any violation or threatened violation of the conditions of this Order, the violation or threatened violation shall be subject to any remedies, penalties, process, or sanctions as provided for under State law and section 401 (d) of the federal Clean Water Act. The applicability of any State law authorizing remedies, penalties, process, or sanctions for the violation or threatened violation constitutes a limitation necessary to ensure compliance into this Order.

- a. If Pit Resource Conservation District or a duly authorized representative of the project fails or refuses to furnish technical or monitoring reports, as required under this Order, or falsifies any information provided in the monitoring reports, the applicant is subject to civil, for each day of violation, or criminal liability.
- b. In response to a suspected violation of any condition of this Order, the Central Valley Water Board may require Pit Resource Conservation District to furnish, under penalty of perjury, any technical or monitoring reports the Central Valley Water Board deems appropriate, provided that the burden, including cost of the reports, shall be in reasonable relationship to the need for the reports and the benefits to be obtained from the reports.
- c. Pit Resource Conservation District shall allow the staff(s) of the Central Valley Water Board, or an authorized representative(s), upon the presentation of credentials and other documents, as may be required by law, to enter the project premises for inspection, including taking photographs and securing copies of project-related records, for the purpose of assuring compliance with this certification and determining the ecological success of the project.


REGIONAL WATER QUALITY CONTROL BOARD CONTACT PERSON:

Guy F. Chételat, P.G., Redding Branch Office, 415 Knollcrest Drive, Suite 100, Redding, California 96002, gchetelat@waterboards.ca.gov, (530) 224-4997

WATER QUALITY CERTIFICATION:

I hereby issue an order certifying that any discharge from Pit Resource Conservation District, Lower Ash Creek Wildlife Restoration Project (WDID# 5A25CR00041) will comply with the applicable provisions of §301 ("Effluent Limitations"), §302 ("Water Quality Related Effluent Limitations"), §303 ("Water Quality Standards and Implementation Plans"), §306 ("National Standards of Performance"), and §307 ("Toxic and Pretreatment Effluent Standards") of the Clean Water Act. This discharge is also regulated under State Water Resources Control Board Water Quality Order No. 2003-0017 DWQ "Statewide General Waste Discharge Requirements For Dredged Or Fill Discharges That Have Received State Water Quality Certification (General WDRs)".

Except insofar as may be modified by any preceding conditions, all certification actions are contingent on (a) the discharge being limited and all proposed mitigation being completed in strict compliance with Pit Resource Conservation District's project description and the attached Project Information Sheet, and (b) compliance with all applicable requirements of the Regional Water Quality Control Board's Water Quality Control Plan (Basin Plan).


(for) PAMELA C. CREEDON
Executive Officer

Enclosure: Project Information

cc: See Attached List

cc: Mr. Matt Kelley, U.S. Army Corp of Engineers, Redding
U.S. Fish and Wildlife Service, Sacramento
Ms. Donna Cobb, Department of Fish and Game, Region 1, Redding
Mr. Bill Jennings, CALSPA, Stockton

cc by email: Mr. Dave Smith, U.S. EPA, Region 9, San Francisco
Mr. Bill Orme, SWRCB, Certification Unit, Sacramento

U:\Clerical\NPS\Source\GChetelat\2010\401 Lower Ash Creek Wildlife Restoration (5A25CR00041).doc

PROJECT INFORMATION

Application Date: 12 August 2010

Applicant: Pit Resource Conservation District, Attn: Mr. Todd Sloat, PO Box 301, Adin 96006

Applicant Representatives: Not Applicable

Project Name: Lower Ash Creek Wildlife Restoration Project

Application Number: WDID No. 5A25CR00041

U.S. Army Corps File Number: Nationwide Permit No. 27 (Aquatic Habitat Restoration, Establishment, and Enhancement Activities)

Type of Project: Restoration of Lower Ash Creek.

Project Location: Section 19, 24-30, 32-35, Township 39 North, Range 8 & 9 East, MDB&M. Latitude: 41°11'29" and Longitude: -121°01'56"

County: Lassen & Modoc County

Receiving Water(s) (hydrologic unit): Lower Ash Creek, which is tributary to Pit River. Pit River Hydrologic Unit-Beiber Hydrologic Area No. 526.61

Water Body Type: Streambed

Designated Beneficial Uses: The Basin Plan for the Central Valley Water Board has designated beneficial uses for surface and ground waters within the region. Beneficial uses that could be impacted by the project include: Municipal and Domestic Water Supply (MUN); Agricultural Supply (AGR); Groundwater Recharge, Water Contact Recreation (REC-1); Non-Contact Water Recreation (REC-2); Warm Freshwater Habitat (WARM); Cold Freshwater Habitat (COLD); Warm Freshwater Spawning (SPWN); Cold Freshwater Spawning (SPWN); and Wildlife Habitat (WILD).

Project Description (purpose/goal): The project will consist of using a "plug-and-pond" technique to block an eroding channel that has down cut through a meadow, and redirecting the stream to a historic remnant channels. This is accomplished by partially filling the incised channel. Portions of the channel are excavated and enlarged to create ponds, and newly excavated material is used to fill areas in between the ponds that referred to as "plugs." The redirected flow in the remnant channels will raise the water table and rehydrate the site, gradually reestablishing the wet meadow conditions. Topsoil and vegetation from the excavated areas, including sod and willows, will be salvaged and used to re-vegetate the "plugs."

Preliminary Water Quality Concerns: Construction activities may impact surface waters with increased turbidity and settleable matter.

Proposed Mitigation to Address Concerns: Pit Resource Conservation District will implement Best Management Practices (BMPs) to control sedimentation and erosion. All temporary affected areas will be restored to pre-construction contours and conditions upon completion of construction activities. Pit Resource Conservation District will conduct turbidity testing during in-water work, stopping work if Basin Plan criteria are exceeded or are observed.

Fill/Excavation Area: Project implementation will permanently impact 92,124 linear feet of un-vegetated streambed.

Dredge Volume: Not Applicable

U.S. Army Corps of Engineers Permit Number: Nationwide Permit # 27

Department of Fish and Game Streambed Alteration Agreement: Pit Resource Conservation District applied for a Streambed Alteration Agreement on 12 August 2010.

Possible Listed Species: Based on the habitat suitability assessment conducted by Vestra Resources Inc., the following Federal Threatened or Endangered species have potential to occur in the project area: greater sandhill crane, and Swainson's hawk.

Status of CEQA Compliance: The Department of Fish and Game issued a final Notice of Determination approving a Mitigated Negative Declaration on 15 June 2010 (State Clearinghouse Number 2010062071).

Compensatory Mitigation: Project will restore 2,415 acres of jurisdictional wetlands and about 110,00 linear feet of streambed. The project will enhance 1,085 acres of jurisdictional wetlands and about 20 acres of riparian.

Application Fee Provided: Total fees of \$640.00 have been submitted as required by 23 CCR §3833b(3)(A) and by 23 CCR §2200(e) on 12 August 2010.



To: Mr. Todd Sloat/Pit RCD

Ref: Lower Ash Creek W/A Restoration Project

Dear Todd,

This letter is written to let you know that California Waterfowl fully supports the project on Ash Creek Wildlife Area, known as "Lower Ash Creek Wildlife Area Restoration Project". We have reviewed the proposal and enthusiastically support the concept of restoring the flood plain and seasonal wetland function within the Ash Creek Wildlife Area. In addition to habitat restoration the installation of the proposed pipelines will increase the abilities of onsite management to effectively and efficiently convey water, and ultimately provide more water for wildlife habitat and wet meadow function. The scope and positive impact of this project will have a significant and dramatic beneficial effect on the entire Lower Ash Creek watershed and compliment other endeavors within the Pit River system. In 2009 California Waterfowl in partnership with WCB, IMWJV and California Department Fish and Game completed a series of small of projects just upstream from your proposed project site, although significantly smaller is size, the concept is in harmony with your project, and that is, to restore hydrology, negate erosion, convey water efficiently, enhance and restore habitat, please accept my full support and offer to help in anyway we can in moving this project forward.

My Sincere Regards,

Rick Maher

Regional Biologist Northeastern California

4630 Northgate Blvd., Suite 150, Sacramento, CA 95834
916.648.1406 ~ www.calwaterfowl.org

Memorandum

Date: October 23, 2009

To: John Donnelly, Executive Director
Wildlife Conservation Board

From: Donald Koch, Director
Department of Fish and Game

Subject: DFG Support for Ash Creek Wildlife Area (ACWA) - Lower Ash Creek Restoration Project

The Department of Fish and Game (DFG) in cooperation with the Pit Resource Conservation District (PRCD) respectfully requests the Wildlife Conservation Board (WCB) allocate funds necessary to restore approximately 3,500 acres of floodplain habitat. Sierra Nevada Conservancy (SNC) provided funding for the initial design and environmental documentation. SNC continues to express interest in providing additional funding for project implementation. Recently, The National Fish and Wildlife Foundation requested a full proposal be submitted to them. This project has the support of the Lassen County and Modoc County Board of Supervisors.

The ACWA was purchased to protect, restore, and enhance wetlands; provide habitat for migrating water birds and other resident wetland associated wildlife; enhance and maintain habitat for threatened or endangered species and increase waterfowl production. Ash Creek's channel and its many sub-channels have incised into the alluvial soils causing a loss of floodplain access during most flood events. This ultimately results in a change of habitats from a wet meadow vegetation type to its current more xeric or very dry condition. A proven restoration method, known as the "pond-and-plug" technique, is proposed to restore approximately 3,500 acres of wet meadow habitat on the ACWA. The total cost of this project is estimated at \$3,800,000.00

Key project elements include:

- 1) Redesign water delivery system.
- 2) Redesign County Road 87A.
- 3) Remove levees causing floodplain restrictions.
- 4) Utilize the "pond and plug" restoration technique within the incised channel system.

Objectives of this project are to:

- 1) Restore the channel and floodplain connection in all degraded reaches.
- 2) Stabilize eroding gully channels.
- 3) Improve the health and vigor of the wetland landscape.
- 4) Enhance nesting habitat for waterfowl and migratory birds.
- 5) Improve fish habitat for native Pit River fishes.
- 6) Improve water quality
- 7) Raise groundwater level
- 8) Conserve water
- 9) Minimize long-term maintenance.

This project will substantially contribute to the goals of California's Wildlife Action Plan, North American Waterfowl Management Plan, Intermountain West Joint Venture, U.S. Shorebird Conservation Plan, North American Waterbird Conservation Plan, Ducks Unlimited's Conservation Plan, and National Audubon Society's Important Bird Areas (IBA) Program

DFG fully supports this project outlined herein and recommends WCB take appropriate action to implement this project. If you have any questions, please contact Mr. Steve Burton, Senior Environmental Scientist at (530) 459-1129. Thank you for collaborating with us to protect, restore, and enhance California's vital wetland habitats.



WESTERN REGIONAL OFFICE

3074 Gold Canal Drive
Rancho Cordova, CA 95670-6116
(916) 852-2000 Fax (916) 852-2200
www.ducks.org

September 9, 2010

Jim Branham, Executive Director
Sierra Nevada Conservancy
11521 Blocker Drive, Suite 205
Auburn, CA 95603

RE: Support for Ash Creek Wildlife Area Floodplain Restoration Project

Dear Mr. Branham,

Ducks Unlimited (DU) supports the Ash Creek Wildlife Area Floodplain Restoration implementation grant request being submitted by the Pit Resource Conservation District (RCD) to your agency. The grant would provide a significant portion of the funding needed to construct this major floodplain restoration project in Big Valley near Adin. The site presently provides a moderate level of wildlife habitat but continued channel incision and lowering of the water table is drying out the floodplain wetlands which are then converting to uplands. If this restoration project is not constructed within the next few years, Ash Creek Wildlife Area could lose several thousand acres of floodplain wetland habitat due to continued channel incision and the resultant upland conversion.

Pit RCD will soon be submitting a companion grant request to the Wildlife Conservation Board (WCB) that would fund most of the remainder of the multi-million dollar project. DU is collaborating with the RCD on the effort, reviewing the 7+-mile long water conveyance pipeline component of the project, providing engineering review and budgeting recommendations for this. When grant funds are secured from WCB, DU anticipates assisting Pit RCD with delivery of this component of the project as well as other project elements that will result in the restoration of over 3,000 acres of floodplain wetlands.

With about 40,000 members in California and over one million members, supporters, and volunteers nationwide, DU is the world's largest wetlands conservation organization. In California, DU has worked in collaboration with private landowners, other non-governmental organizations, and state and federal agencies to help conserve over 600,000 acres. We look forward to collaborative efforts with your agency, Pit RCD, and Ash Creek Wildlife Area staff, and strongly support your efforts on their behalf.

Sincerely,

Mark Biddlecomb
Director

Application Checklist for Category One Grants

Project Name: _____

Applicant: _____

Project Name: Lower Ash Creek Wildlife Restoration Project

Applicant: Pit Resource Conservation District

1. ☒ Completed Checklist (EFN: Checklist.doc,.docx,.rtf, or .pdf)
2. ☒ Table of Contents (EFN: TOC.doc,.docx,.rtf, or .pdf)
3. ☒ Application Form (EFN: AppForm.doc, .docx, .rtf, or .pdf)
4. ☒ Authorization to Apply or Resolution (EFN: AuthRes. doc, .docx, .rtf, or .pdf)
- 5a. n/a ☐ Articles of Incorporation [501(c)(3)s only] (EFN: ArtInc.doc, .docx, .rtf, or .pdf)
- 5b. n/a ☐ Bylaws [501(c)(3)s only] (EFN: Bylaws.doc, .docx, .rtf, or .pdf)
- 5c. n/a ☐ Tax Exempt Status Letter from the Internal Revenue Service [501(c)(3)s only] (EFN: IRS.doc,.docx,.rtf,.pdf)
6. ☒ Project Summary (Two page maximum) (ENF: ProjSum.doc, .docx, .rtf, or .pdf)
7. ☒ Evaluation Criteria Narrative (ENF: EvalCrit.doc, .docx, .rtf, .pdf)
8. ☒ Detailed Budget Form (ENF: Budget.xls, .xlsx)
9. ☒ Long Term Management Plan (no EFN - included in the Evaluation Criteria Narrative)
10. ☒ Performance Measures (ENF: Perform.doc, .docx, .rtf, or .pdf)
11. ☒ Environmental Setting and Impacts (ENF: EnvSetImp.docx, .docx, .rtf, .pdf))
12. ☒ Project Location Map (ENF: LocMap.pdf)
13. ☒ Parcel Map showing County Assessor's Parcel Number(s) (ENF: ParcelMap.pdf)
14. ☒ Topographic Map (ENF: Topo.pdf)
15. ☒ Site Plan (Site improvement/restoration projects) (ENF: SitePlan.pdf)
16. ☒ Photos of the Project Site (10 maximum) (ENF: Photo.jpg, .gif)
17. n/a ☐ Acquisition Schedule (Acquisition projects) (ENF: AcqSched.doc,.docx,.rtf,.pdf)
18. n/a ☐ Willing Seller Letter (Acquisition projects) (ENF: WillSell.pdf)
19. ☒ Land Tenure (For site improvement/restoration projects) (ENF: Tenure.pdf)
20. ☒ Leases or Agreements (ENF: LeaseAgrmnt.pdf)
21. ☒ California Environmental Quality Act (CEQA) documentation (ENF: CEQA.pdf)
22. ☒ National Environmental Policy Act (NEPA) documentation (ENF: NEPA.pdf)
23. ☒ Regulatory Requirements / Permits (ENF: RegPermit.pdf)
24. ☒ Demonstrations of Support (ENF: DOS.pdf)
25. n/a ☐ Real Estate Appraisal (Acquisition projects) (ENF: Appraisal.pdf)

LAND TENURE

The State of California, Dept. of Fish and Game manages and control access to the project site.

LEASES OR AGREEMENTS

There are no leases or agreements affecting project lands or the future operation and maintenance thereof. The project has been designed to maintain and improve the States existing agreements to deliver water to downstream users.

CALIFORNIA ENVIRONMENTAL QUALITY ACT

The Pit RCD and CDFG prepared an Initial Study Negative Declaration with the help of a consultant and this document was filed with the State Clearinghouse on June 24, 2010. The DFG field a Notice of Determination to the Clearinghouse on August 17, 2010. See Appendix A for CEQA compliance information.

ENVIRONMENTAL CHECKLIST FORM

- 1 Project Title: Ash Creek Wildlife Area Restoration
- 2 Lead Agency Name and Address:
California Department of Fish and Game, 601 Locust St., Redding, CA 96001
- 3 Contact Person and Phone Number: Mr. Steve Burton 530-459-1129
- 4 Project Location: 1mile north of Highway 299 between Bieber and Adin, CA
- 5 Project Sponsor's Name and Address:
Pit Resource Conservation District
PO Box 301
Bieber, CA 96009
- 6 General Plan Designation: Agriculture General 7 Zoning: Agricultural Preserve
Agriculture exclusive
- 8 Description of Project: (Describe the whole action involved, including but not limited to later phases of the project, and any secondary, support, or off-site features necessary for its implementation. Attach additional sheet(s) if necessary.)

See attached
- 9 Surrounding Land Uses and Setting: (Briefly describe the project's surroundings.)

The surrounding lands are primarily used for agriculture and rangeland. Most of the surrounding landscape is farmland, grassland, or sagebrush scrub.
- 10 Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement):

California Regional Water Quality Control Board-401 Certification
Army Corps of Engineers-Notification for NWP 27

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

- | | | |
|----------------------------------------------------------|---------------------------------------------------------------|--------------------------------------------------------------|
| <input type="checkbox"/> Aesthetics | <input type="checkbox"/> Agriculture Resources | <input type="checkbox"/> Air Quality |
| <input checked="" type="checkbox"/> Biological Resources | <input checked="" type="checkbox"/> Cultural Resources | <input checked="" type="checkbox"/> Geology / Soils |
| <input type="checkbox"/> Hazards & Hazardous Materials | <input checked="" type="checkbox"/> Hydrology / Water Quality | <input checked="" type="checkbox"/> Land Use / Planning |
| <input type="checkbox"/> Mineral Resources | <input type="checkbox"/> Noise | <input checked="" type="checkbox"/> Population / Housing |
| <input type="checkbox"/> Public Services | <input checked="" type="checkbox"/> Recreation | <input checked="" type="checkbox"/> Transportation / Traffic |
| <input type="checkbox"/> Utilities / Service Systems | <input type="checkbox"/> Mandatory Findings of Significance | |

DETERMINATION (To be completed by the Lead Agency):

On the basis of this initial evaluation:

- ☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.
- ☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.
- ☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.
- ☐ I find that the proposed project MAY have a "potentially significant" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.
- ☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Signature

Date

Printed Name

For

INITIAL STUDY

ASH CREEK WILDLIFE AREA RESTORATION PROJECT



Prepared for

California Department of Fish and Game

MAY 2010

Prepared by

VESTRA Resources Inc.
5300 Aviation Drive
Redding, California 96002

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- 4 Vehicle Tour Route for Wildlife Viewing

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- A Photographs
- B ACWA Cut and Fill Balance Worksheet
- C Special-Status Wildlife Species
- D Special-Status Plant Species

Introduction

PROJECT PROPONENT

The Pit Resource Conservation District (RCD) received grant funds from the Sierra Nevada Conservancy to develop a restoration plan and prepare necessary environmental and permit documents for lower Ash Creek and its floodplain within the Department of Fish and Game's Ash Creek Wildlife Area (ACWA). The RCD has been working closely with the California Department of Fish and Game (DFG) for the last 2 years to develop a restoration plan for the project area. This Initial Study analyzes the effects of the proposed restoration plan.

LEAD AND TRUSTEE AGENCIES

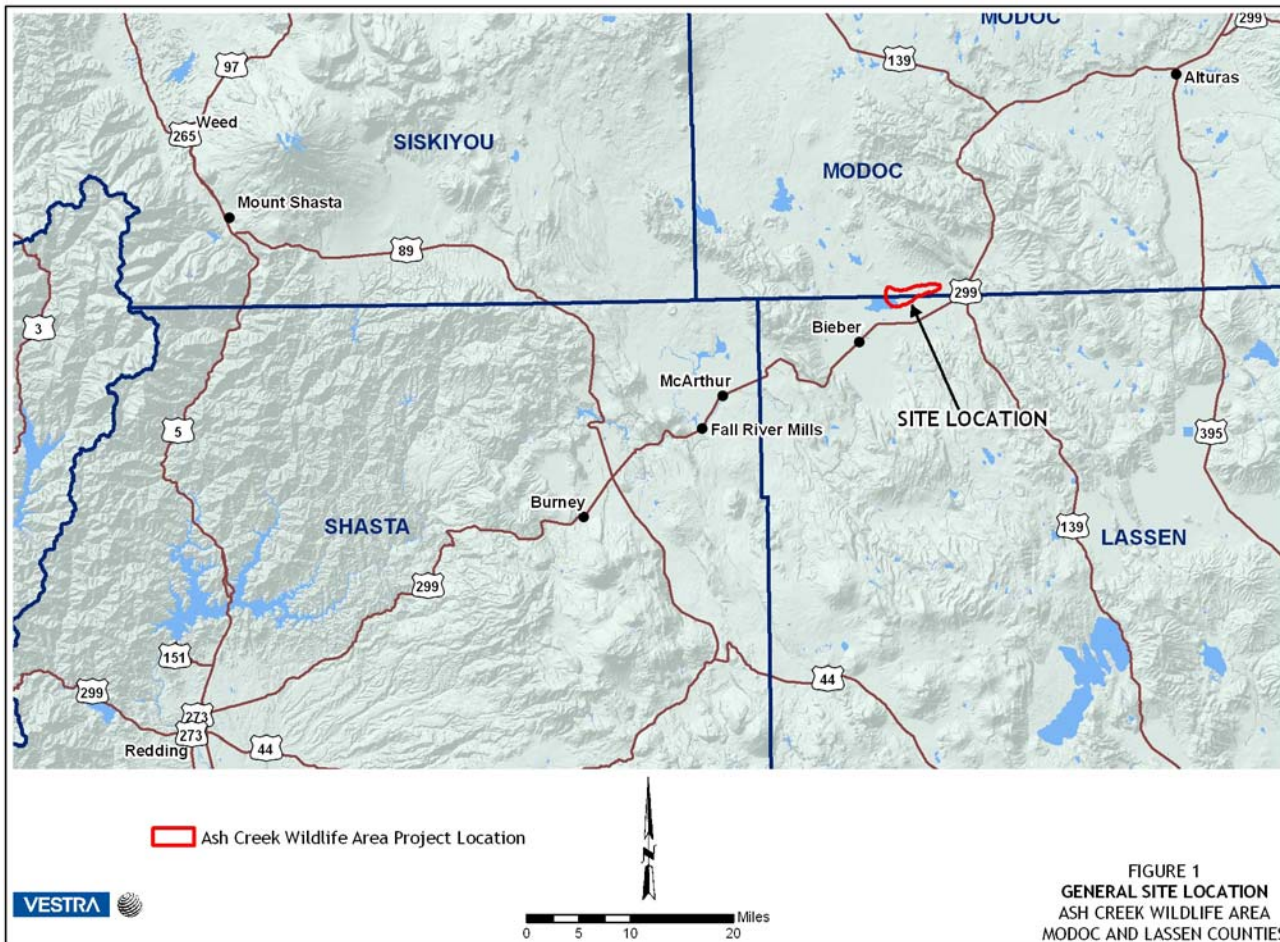
Because of the potentially significant impacts that could occur as a result of project construction, and because the project is funded by the State of California, it is subject to the requirements of the California Environmental Quality Act (CEQA). The proposed project crosses jurisdiction and requires approvals and permits from various federal, state, and local agencies. Compliance with federal environmental regulations, such as the Clean Water Act and National Historic Preservation Act, is also required. DFG has been identified as the Lead Agency for this project.

PROJECT LOCATION

The DFG manages the ACWA located near the towns of Bieber and Adin in Lassen and Modoc Counties (Figure 1). The project area consists of the lower portion of Ash Creek before it joins the Pit River. The total area of the creek and associated floodplain identified in this project consists of approximately 3,500 acres.

PROJECT SUMMARY

The ACWA provides important habitat for a variety of biological species and is one of the major nesting areas for the State threatened greater sandhill crane. Several thousand waterfowl use ACWA, especially during spring migration (e.g. March and April). However, existing habitat and natural resources along Ash Creek and its associated floodplain are degraded and continue to degrade. The current degradation is due to a variety of past management practices which occurred prior to the State's purchase of the property. Continued degradation to aquatic habitat within Ash Creek and upland habitat within the project area is expected because the creek has become deeply incised and flood flows rarely access the floodplain (see photographs 1-8 in Appendix A). This lack of floodplain connection can be visually observed within the floodplain as wet meadow vegetation that has become replaced with upland grassland and sagebrush habitat types (see photographs 4,7,8 in Appendix A). A proven restoration method, known as the "pond-and-plug" technique, is proposed to restore approximately 3,500 acres on the ACWA.



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PROJECT NEED AND OBJECTIVE

This project will restore and enhance Ash Creek and its floodplain. Currently, the creek is incised and continues to degrade stream channel and floodplain conditions as most peak flood flows are now contained in the gully.

The landowner and project sponsor objectives for this project include:

- 1) Restore the channel and floodplain connection in all degraded reaches.
- 2) Stabilize eroding gully channels.
- 3) Improve the health and vigor of the wetland landscape.
- 4) Enhance nesting habitat for waterfowl and migratory birds.
- 5) Improve fish habitat for native Pit River fishes.
- 6) Minimize long-term maintenance.

PROJECT BACKGROUND

The Pit RCD and DFG first discussed restoration ideas along Ash Creek in the winter of 2006. From these conversations, a conceptual design was developed for lower Ash Creek and its floodplain. The project area is shown on Figure 2. The conceptual design plan was used to submit a funding application to the Sierra Nevada Conservancy. The application proposed to develop a restoration design plan and prepare the necessary permit and compliance documents. The restoration design plan was completed in August 2008.

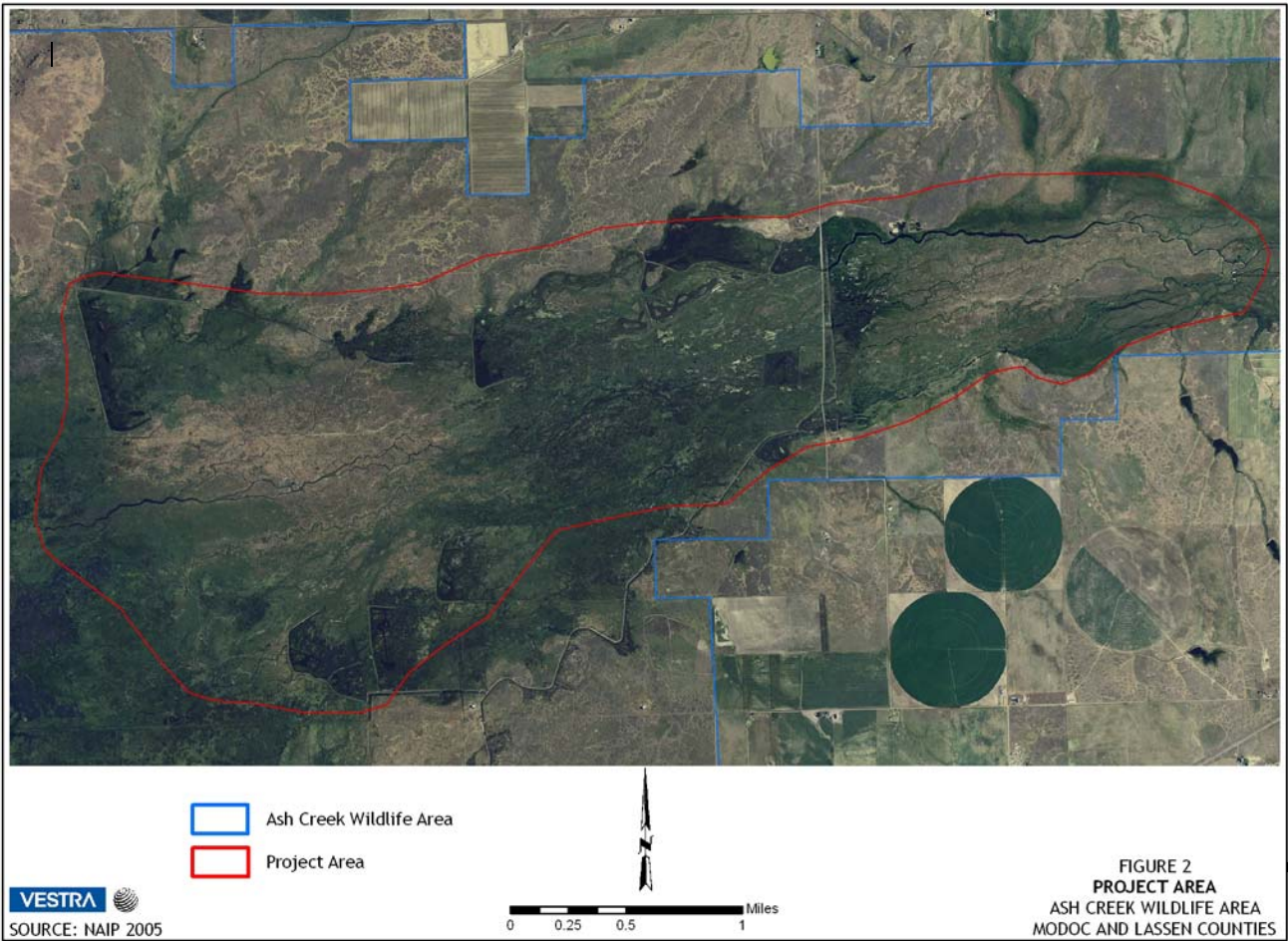
SCOPE OF THE INITIAL STUDY

The DFG, as lead agency under CEQA, must comply with the environmental review process described in the state CEQA guidelines. The focus of the detailed discussion in this Initial Study is on the specific issues and concerns identified in the environmental significance checklist and relevant portion which opens each resource section in the “Environmental Setting” section. The following resource topics are analyzed in this Initial Study:

- 1) Biological Resources
- 2) Cultural Resources
- 3) Geology and Soils
- 4) Hydrology and Water Quality
- 5) Recreation
- 6) Land Use Planning
- 7) Population Housing
- 8) Transportation/Traffic

SUMMARY OF IMPACTS AND MITIGATION MEASURES

Table 1 contains a summary of the results of the impact analysis by resource topic, including resources avoided through project design and residual impacts, which are considered less than significant.



VESTRA
SOURCE: NAIP 2005

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<p align="center">Table 1 SUMMARY OF POTENTIAL IMPACTS AND MITIGATION MEASURES</p>	
Potential Impact	Mitigation Measure
Disturbance of nesting greater sandhill cranes and/or Swainson's hawk	Conduct preconstruction surveys and avoid disturbance until nesting has been completed
Disturbance of special-status plant species	Conduct preconstruction surveys and avoid direct impacts if feasible. If not feasible, minimize impacts and stockpile topsoil, collect seeds/fruits, and remove sod-mats for replanting in new areas depending upon the species impacted.
Short-term disturbance of Waters of the United States and Other Wetlands	Restore natural drainage hydrology of the stream channels and floodplain
Temporary disturbance of common wildlife and fish species	Conduct surveys and rescue fish and other aquatic animals (e.g. turtles) if they become stranded during construction activities
Potential adverse change in the significance of historical and/or archeological resources	Review archeological records, conduct preconstruction archeological surveys, and prepare an archeological resource management report which avoids disturbance to sensitive sites
Potential to inadvertently disturb human remains during ground-disturbing activities	Stop construction at the site and notify appropriate state authorities
Potential for damage to buried archaeological sites	Stop construction at the site and notify appropriate state authorities
Potential impacts on terrestrial and aquatic resources from hazardous materials	Refueling and equipment maintenance will be conducted in designated areas outside of the riparian and aquatic areas following identified BMPs

PROJECT DESCRIPTION

To effectively address the full spectrum of project objectives identified in the Project Summary, it is necessary to consider the restoration of the natural form and function of the ACWA stream channels and floodplain. This not only provides the best match of methods to objectives, but offers the best opportunity to restore a self-maintaining ecosystem. The restoration design recommends restoring the historic conditions that dissipate flood flows across the wide floodplain surface rather than engineering hardened structural components designed to resist the forces of peak runoff that have been artificially constricted along narrow corridors.

Geomorphic restoration was recommended as the most cost-effective method available to meet all project objectives, provide acceptable levels of risk, and facilitate current management practices.

This section summarizes the key project elements associated with the restoration design (prepared by StreamWise 2008). These include:

- 1) Redesign of the water delivery system
- 2) Redesign of County Road 87A (CR87A) and adjacent levee removal
- 3) Removing existing levees that occur within the floodplain that are causing floodplain constriction west of CR 87A.
- 4) Constructing "pond and plug" within the incised channel systems throughout the project area

Figure 3 shows the layout of these project elements.

1) Redesign of Water Delivery System

The County of Modoc Watermaster Department administers water rights associated with this project (subject to Judgment and Decree Number 3670). Water is diverted from Ash Creek to ACWA and adjacent landowners via a rock structure located at the east end of the project area and a levee parallel to CR87A. This project will require the removal of these structures. To maintain water rights, two pipelines will be installed improving water delivery, water conservation, and fish passage. The project does not divert or store additional water.

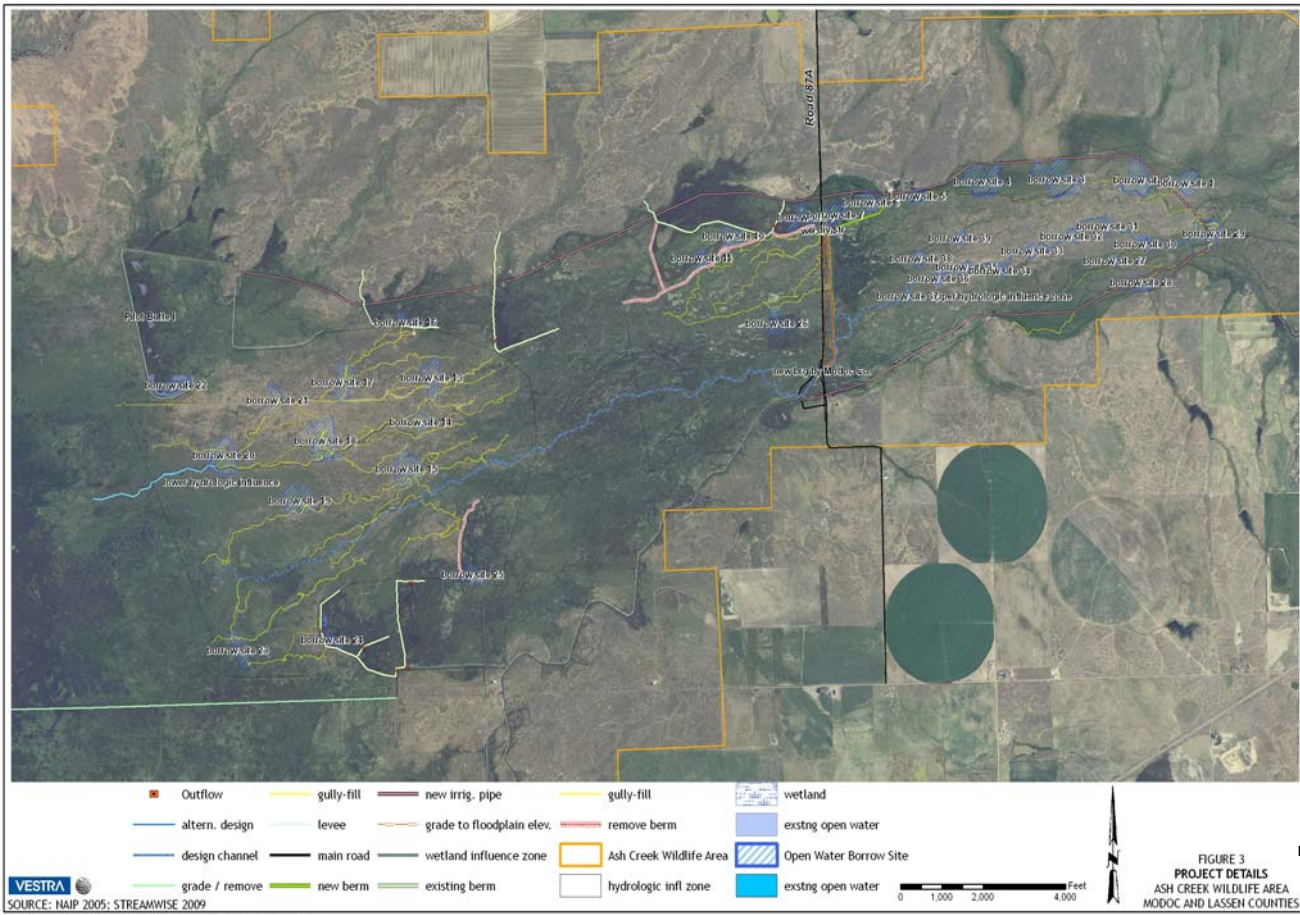
The existing rock diversion structure will be removed and the channel redesigned to maintain low-flow water elevation and allow flood flows to overtop. The installation of a pond in the channel will allow water to be diverted into two pipelines. One 24-inch pipeline will lead from the pond and extend west to CR87A. It will continue west in an 18-inch pipeline and end at the Pilot Butte 3 wetlands unit. The second 24-inch pipeline will follow along the southern edge of the meadow continuing west and end at the Big Valley Canal. Water control valves installed in the pipeline will allow the distribution of water to individual wetland units and water right holders. A total of 6.9 miles of pipeline are proposed. Disturbance of cultural resources, known to occur in upland areas, are avoided by burying the pipeline along the perimeter of the lowland areas.

The pipelines allow for the restoration of the natural form and function of the channel and floodplain, water right allocations to continue without interruption, and flows to be accurately measured. Seepage and evaporation losses that currently occur from the ditch transport system will be eliminated by the redesigned water delivery system. Management of individual wetland areas will be improved by eliminating the need to flow water through several wetland areas to reach lower sites.

2) Redesign of CR87A and Adjacent Levee Removal

Several gullies have formed immediately downstream of CR87A. Design of a restoration project that restores natural form and function of stream channels across a broad floodplain is made difficult by the collection of flood flow by the levee and road, as well as the release of this energy at constricted points (i.e. culverts and bridges). The alluvial deposits that form the meadow in this reach are unable to withstand such concentrated flows as they have evolved through the centuries with flood flow spreading across a floodplain over 3,000 feet in width.

Two bridges located on CR87A are scheduled for replacement in 2010. The north bridge is wood construction and allows flood flows to pass downstream. The south bridge is a steel girder bridge and allows irrigation water to flow into the Big Valley Canal. One potential benefit of lowering CR87A is the elimination of the need to replace the north bridge. Water passing under this bridge would be restored to the floodplain surface and eliminate the need for any structure at this point. Restoration of the floodplain function would lower maintenance of the south bridge by requiring only channel-capacity flows to pass. Floodwater would spread across the 3,000-foot floodplain, making scour points at bridge piers improbable. Culverts located in CR87A would be eliminated, further reducing maintenance requirements.



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Discussions with local residents, Modoc County planners, and DFG determined that the removal of the levee system and lowering of CR87A to match floodplain elevation would meet project objectives if the road were operational during most of the season. By lowering the road base to floodplain elevation, it would be passable at all times except during flood events. The development of a Memorandum of Understanding (MOU) between Modoc County and DFG will ensure CR87A remains open to the public except during flood events. The MOU will also detail the need to maintain CR87A at floodplain elevation.

3) Berm or Levee Removal

Various areas in the project have levee or berm remnants that have been used for water management. Some are also the remnants of previous excavations or channelization projects. Such levees tend to prevent flood flows from dispersing evenly across an otherwise flat floodplain. By concentrating floodwater energy, the levees increase the risk of erosion, either at the levee itself or elsewhere where flood flows are concentrated as a result of the obstruction. The primary means of ensuring project success is by dispersing flood flows evenly across a well-vegetated floodplain, as in the stable historic condition.

Some of the levees (or berms) in the project area pose a potential threat to the project success and would be removed and leveled to match the elevation and slope of the surrounding floodplain. Sites that are recommended for berm removal are outlined on the plan view map (Figure 3). Following levee removal, these areas would require vegetative seeding to ensure stability in flood flows.

4) Pond-and-Plug Construction

The pond-and-plug restoration technique first involves the relocation of the primary low-flow stream to a stable remnant channel that exists along the central portion of the meadow. The enlarged gullies then require fill in order to prevent recapturing flow during peak-flow events. The fill would be derived from the excavation of ponds at multiple locations along the gully (Figure 3). The borrow pond locations offer wide separation between the filled gullies and the design channel to reduce risk of pond capture during peak runoff events. This technique is often referred to as “pond-and-plug” methodology and has been used on numerous projects in California and elsewhere. Some of these projects have been tested over 15 seasons with supportive results from monitoring programs.

This design approach was considered the best to achieve the objectives of the project proponents. It would reconnect the channel and the floodplain and, thereby, restore the water table to the predisturbance elevation, helping to revitalize the riparian community and wet meadow. It would also alleviate the problem of erosion from the gully walls, and the new channel would be much less susceptible to erosion. Fish habitat within the project area would be improved as a result of reduction in width-to-depth ratio of the channel. Long-term maintenance should also be substantially reduced over present levels.

Most importantly, the groundwater hydrology in the vicinity of the gully channels would be restored to prechannelization conditions, allowing recovery of the wetland resources in these areas. The two Wetland Influence Zones are defined as the areas of landscape that would be immediately influenced by the elimination of the incised gullies in the adjacent area. The upper Wetland Influence Zone

surrounding the CR 87A crossing is measured at 1,235 acres, beginning near the terminus of the gully systems below CR 87A and extending upstream to the pond at the top of the project. Some areas remain in wet condition above CR 87A due to the impoundment of water by the large north/south levee to the east of the road. This influence extends upstream several hundred feet but gives way to vegetation that has been negatively influenced by the relocation of the low-flow channel to the north.

The lower Wetland Influence Zone begins approximately 7,950 ft below (west) of County Road 87A crossing and extends 9,250 ft downstream to the terminus of the lower gully systems at the upper edge of the intact wetlands. The lower Wetland Influence Zone is measured at approximately 1,180 acres. This entire area has been severely impacted by a network of incised gullies that have drained the wetland surface and created a desiccated landscape conducive only to annual weeds and sagebrush.

In total, the two zones that would be immediately enhanced by restoration of the groundwater hydrology cover approximately 2,415 acres, or 3.77 square miles. There is some legitimate argument that geomorphic restoration has influences outside this limited area, but the current conservative estimate is sufficient to justify actions to restore the historic form and function of Ash Creek. It is expected that the 150 acres of disturbance to impacted wetlands caused by the necessity to borrow fill material from the pond sites located along the gully features would be adequately offset by the restoration of the 2,415 wetland acres under direct influence of the gully formations.

Other support for immediate action to restore the channel form and function comes from the data analysis and conclusion that the two gully systems would likely join in 10 to 20 years, causing a rapid decline in wetland resource values as the remaining intact meadow is desiccated by the deepened drainage of the gullies.

Flood flow levels after project completion are expected to closely mimic historic conditions prior to channel incision. Due to the expansive floodplain width, alterations to channel capacity recommended in restoration design would not have a significant effect on flood water surface elevations.

Pond Dimension, Depth, and Pattern

Approximate pond dimensions and depths are outlined in Appendix B, locations of each can be found in Figure 3. These dimensions were calculated to yield the volume of soil necessary to fill the existing gullies to grade. Filling these gullies is necessary to prevent flood flows from recapturing the gully and causing further accelerated bed and bank erosion. The total acreage of new ponds would be approximately 150.3 acres. The volume of fill derived from this excavation is expected to be approximately 518,000 cubic yards. The mean depth of the ponds would vary according to location, proximity to the low-flow channel, required material, and ground conditions. In general, the objective to enhance brood habitat for migratory waterfowl is best served by creation of open-water habitat. This requires sufficient depth to prevent a complete emergence of cattails and tules. Excavating material at sufficient depth to ensure open-water habitat is consistent with the project goal of minimizing disturbance to existing wetland resources when creating the footprint of the borrow ponds.

During pond excavation, sod mats from the top surface would be saved for revegetation of the filled gully reaches. The sod mats that are not of high enough quality for transplant would be stockpiled for use in the final layer of the gully fill. The seed bank contained in this sod and topsoil would

greatly enhance the vegetative recovery of the gully fill and reduce risk of soil loss during flood events.

Determination of the final equipment requirements to accomplish these tasks should be made by the construction contractor in accordance with the project specifications.

Pond and Fill Area Revegetation

Pond Revegetation: Pond perimeter revegetation will occur naturally, but planting some of the perimeter is recommended in order to reduce risks of erosion from a high-flow event. Willow cuttings will be obtained onsite and planted by hand. Cattails and tules are widespread and can be easily spread along the pond banks.

Other species can be introduced for specific benefits, such as wildlife browse and cover. Hawthorn, chokecherry, wild lilac, and wild rose are a few examples of beneficial native vegetation that can be acquired locally and introduced into the project area for increased wildlife usage.

Another method for revegetation of the pond perimeter is to mulch the bare areas with grass cuttings from areas in the vicinity that exhibit good native bunch grass stands. The cuttings would be made in late spring when the seed heads are at maturity. Native seed is also available from a variety of sources if supplementation is needed.

The minimum recommended treatment for the pond areas would include mulching with native mulch and planting seed, plugs, or sod mats in key areas of highest potential stress.

Fill Area Revegetation: The fill area of the current incised gullies would be exposed to the floodwaters of any moderate to large flow event. While the shear stress on the floodplain from flood flows is not great, bare soils do pose a potential risk of some erosion. In a flood event of 100-year magnitude (3,000+ cfs), bare fill material could create a risk of stream recapture along the filled gully. For this reason, it is recommended that the gully fill areas be seeded with perennial grasses, preferably native wetland grasses, as they tend to have high resistance to erosive forces. Additionally, native species generally require the least maintenance and have higher survival rates than non-natives. Native grass species considered for the dryer areas include *Hordeum brachyantherum*, *Leymus triticoides*, and *Poa secunda*. Wetter areas would be likely to support good stands of sedge and rush such as *Scirpa microcarpus*, *Carex praeacilis*, *Carex barberii*, *Juncus mexicana*, and *Juncus covillei*.

Topsoil, which would be stockpiled from the initial phase of pond excavation, should be used as the top layer of fill in the gully treatment wherever feasible. This has the advantage of introducing the seed bank from that topsoil to the gully fill areas. Following the final grading of the fill areas, the most efficient method to disseminate native seeds would be to spread native grass straw taken from areas onsite with appropriate vegetative mix. Native grass straw would be harvested during a period with seed intact in an area that demonstrates a strong native wetland vegetation component. This straw would be used as mulch for the filled gully and pond perimeter sections.

Revegetation of Critical Stress Areas

Particular attention must be paid to the vegetative efforts in areas that may be prone to excessive stress during peak flow events. One such area would be the filled gully interface where the design channel leaves its current course. This area would be subjected to the force of flood flows that are

somewhat confined by the channel upstream of the project area. To ensure stability, log revetments, with root wads attached, would be interlocked at this fill area. Large rock must be used to anchor these logs into the fill. Most importantly, willows must be used to stabilize critical points in this structure to prevent undermining around or under the logs. Willow root balls will be excavated from areas that will be disturbed during project construction, such as the bottom of the gully, and seated into holes dug out with the excavator to accept them. Willow cuttings may also be used to bolster this work.

Sedge/rush sod mats would also be used to protect key areas where erosion potential is high. Sod mats are usually cut from the surface of the borrow ponds with a bucket loader or a Posi-Track loader and reset along areas where velocities are expected to be high. The freshly set sod mats would be watered thoroughly to help ensure root bonding with substrate and to fill air pockets with soil.

PROJECT TIMING

Project construction would begin in late summer 2009 and continue to completion in early fall of the following year. Various stages of the project will be accomplished throughout this time period. Most activities will occur during the dry season (late summer/early fall). This would ensure that soil moisture conditions in the meadow would permit equipment passage with a minimum of damage or compaction. This schedule ensures that instream flow conditions are low in order to minimize any adverse effects of construction on water quality, such as siltation or turbidity slugs. Low instream flow conditions also simplify in-channel construction (such as gully filling) and channel re-routing (moving the stream into the new design channel).

The timing would also be selected so that only a short time exists after construction before soil moisture begins to increase with the onset of the wet season. This will help ensure that new and transplanted vegetation would have the best possible chance of survival.

It is estimated that project construction should take approximately 90 working days, but this is dependent upon contractor crew size and machinery capacity.

ENVIRONMENTAL SETTING

This section provides a summary of the existing conditions for environmental factors that are potentially affected by the proposed project.

Hydrology/Water Quality

Sources of Information and Methodology

Topographic data collected in the mid-1990s were used to create a digital 2-foot contour layer added to the digitized aerial map of the site. After assembling these data, several field trips to the project area were taken to collect a variety of field data relative to hydrology and geology.

Field Data Collection – Surveying

For several sites, a laser level was used in the surveys, which followed standard field survey methods (*Moffitt and Bouchard 1982*). Data from the surveys were entered into a computer spreadsheet for data

analysis and plotting. Charts were plotted and used to document present valley, channel, and bank conditions and dimensions, as well as to determine the amounts of cut and fill that would be required during restoration construction. Data collected during the surveys followed procedures described by Leopold (1978).

Due to the vast expanse of degraded channels, GPS methods of survey were used to document conditions of most gully reaches. The location and extent of each gully was delineated using a handheld Trimble Geo XT GPS data collector. During data collection, a separate data file was compiled that estimated channel width and depth at numerous points along each channel. These data were later combined to estimate cross-sectional area and channel length for each surveyed segment. These data were compiled to produce the gully volume figures.

Existing topographic data compiled in the mid-1990s by DFG were converted to digital format by VESTRA Resources as an overlay on the 2005 ortho-aerial photograph. In most areas, these data were accurate in depicting the landscape and gully formation. In other areas, the digital topographic lines seemed to ignore deep gully incisions. When analyzing the areas of poor match, it was noted that these areas are consistently found upstream of larger gully formations. It was concluded that the topographic data collection (done in the mid-1990s) predated the upstream portion of the gully formation. This discrepancy allows for an estimation of headcut distance from the date of the topographic survey to the present.

Stream Channel Assessment and Typing

Channel assessment and typing followed the protocols developed by Rosgen (1994, 1995, 1996). The protocols involve channel classification, which provides a convenient method of assessing and comparing a number of different parameters associated with channels of different types, as well as a hierarchical assessment method. Methods incorporated into this assessment process include the use of topographic maps and aerial photography, as well as field-collected data documenting channel and valley morphology and geometry.

Use of this classification system allows for efficient communication of current conditions among those familiar with this common method of stream classification. It is not intended to provide any form of template on which to base specifications for design. Restoration design criteria, especially estimation of dimension, pattern, and profile of design channels that will carry the bankfull flow, are based entirely on investigation of the natural form and function as defined by conditions observed in the field. This is accomplished by direct measurement of stable reference conditions, often those left behind as remnant channels abandoned by past rechanneling of the primary flow. Many remnants of stable channel exist through the ACWA project, as the main flow has been redirected into irrigation ditches in many areas. These reaches were surveyed and dimensions noted for design reference. In most areas, the ACWA restoration design will propose a return of the primary flow channel to these small, well-vegetated channels.

Bankfull Determination

One of the parameters that is most important to the character and morphology of a stream channel is its bankfull discharge. Bankfull discharge is defined as the stage at which water first begins to access (or spill out onto) the floodplain. Channel morphologic features (dimension, pattern, and slope) are built and maintained by this flow. Indicators of bankfull stage were sought and located at various locations along Ash Creek in remnant channels in the project area meadow. Bankfull features in the gully channels are unreliable due to the high level of instability in the gully. Methods

for identification of bankfull stage as defined by Leopold and others were followed (*Dunne and Leopold 1978, Harrelson et. al. 1994*). Flow records from the gauging station were analyzed, and data from the short period of record were plotted on a log-normal graph to determine recurrence intervals (*Dunne and Leopold 1978*). These calculations of bankfull were compared to bankfull stages computed from regional flood-frequency data charts (*Waananen and Crippen 1997*). As a last check, discharges were calculated for the remnant channels using dimensional data and Manning's Equation to estimate flow capacity of these channels.

Existing Conditions

Ash Creek drains out of the eastern portion of Lassen County, California, and briefly enters Modoc County at Adin before reentering the northwestern corner of Lassen County. West of Adin, Ash Creek enters the ACWA. Ash Creek drains approximately 258 square miles of Lassen National Forest land mixed with agricultural properties, primarily in the valleys. The elevation at the eastern edge of the project site is approximately 4180 ft and 4130 ft at the western end. Ash Creek runs roughly east to west through the ACWA project site, eventually joining the Pit River near Bieber, California. The Ash Creek watershed is located on the Big Swamp, California, USGS 7.5-minute quadrangle.

Assessment of current stream-channel conditions verifies that the existing active channels are Rosgen type "F-5," which are entrenched channels with silt and sand bed and banks (*Rosgen 1996*) (Figure 3). These channels are entrenched, or incised, to such an extent that they are only able to access their floodplains in extremely high flood events. Consequently, the banks are subjected to extremely high erosional stresses and tend to expand laterally until the excessive stress is alleviated. Given the flood volumes recorded at nearly 3,000 cfs, the current gully would need to erode laterally to many times its current width before dissipation of flood flows could be achieved.

With the channel effectively disconnected from the meadow floodplain, water seldom spreads over the top of the meadow, which would help recharge the groundwater table. Instead, water is almost entirely contained within the gully, and even high flows are routed straight through the meadow in a shorter period of time, so there is little recharge to the groundwater reservoir. In addition, although no piezometers have been placed on this project to measure depth of groundwater, data collected in similar meadows with incised channels show that the channels serve to lower the groundwater table for significant distances on either side (*Poore 2001*).

For well over a century, the project area has been manipulated in an attempt to facilitate agricultural and grazing management. The tendency for the vast open meadow to remain under water for long periods of the year was seen as a limiting factor in grazing management. Numerous straightened gullies, washed-out culverts, incised ditches, and abandoned remnant channels lie in evidence of past efforts to drain the meadow more efficiently. These efforts have succeeded in providing drainage in most areas, but have resulted in deep channel incisement and subsequent desiccation of the surrounding landscape. Aerial photographs clearly depict large acreage of dry landscape in the vicinity of these gullied channels, while adjacent areas with stable channels remain covered with dark green wetland vegetation (Figure 3). This process is very active, and the gullied channels continue to headcut through the landscape. Data collected in the mid-1990s show the extent of the gully migration, while current survey data collected as part of this investigation indicate progression of the headcuts nearly 5,000 ft upstream. Two lineal miles of pristine wetlands separate the lower series of gullies from another series developing just below CR 87A. At the current rate of gully extension, this intact wetland resource will be breached and the two gully systems will connect within 10 to 20

years. The effect on the wetland resource values of the entire ACWA will be negative as the gully system will drain the meadow and reduce habitat values dramatically. It is a certainty that nesting habitat for all wetland-dependent species will be virtually eliminated in the vicinity of the gullies if action is not taken to address the issue in a short timeframe.

Comparison areas of stable channel conditions with gullied areas on the 2005 aerial photograph demonstrate that the vegetative conditions surrounding the gully channels have declined. The stable areas show a much more vigorous wetland vegetative component clearly visible in dark green. This indicator is not present in the vicinity of the gully reaches. Field verification supports this tendency in all reaches.

As mentioned in an earlier section, it was concluded that the topographic data collection (done in the mid-1990s) predated a portion of the gully formation. This discrepancy allows for an estimation of headcut distance from the date of the topographic survey to the present. In general, the distance seems to be in the 4,000- to 5,000-foot range over a period of 10 to 13 years. Based on this rate of extension, the major areas of gully formation and wetland habitat degradation will join in 10 to 20 years. The impact on the wetland groundwater hydrology for the entire ACWA ecosystem will be dramatic if this process is allowed to continue.

In the stable wetland reaches not yet impacted by gully formation, water tends to flow in small, narrow channels that meander through the deeply rooted native wetland grasses. When bankfull flow is carried in a single-thread channel, this type of morphology is classified by Rosgen as an "E" channel type and is very common in meadow environments. However, the ACWA floodplain contains a number of these small channels, forming a distributary system that spreads flows across a very broad lacustrine floodplain. Unlike most braided channels, such as those found across alluvial fan deposits, the distributary system is classified as a "DA" system, meaning a braided system, but in a low-gradient distributary morphology that is usually highly stable with well-vegetated banks and floodplain. These are also known as anastomosing channel systems. Due to the predominance of this stream type surrounding the degraded gully reaches, it is concluded that the historic morphology of channels within ACWA probably followed the definition of a DA stream system (or distributary stream system) without a dominant single-thread channel (*Rosgen 1996*).

The slope of the existing meadow surface, from the top of the proposed project site to the stable wetland area at the lower end, lies at an average value of 0.122 percent. Estimation of design channel sinuosity by dividing valley length into channel length yields an average design channel slope of 0.082 percent.

Past efforts that constructed ditches to drain the wet meadow have helped to speed flow through the system by two primary mechanisms. The first is by increasing the natural channel slope by straightening the flow course through ditching. This speeds velocity and helps rid the meadow of the problematic inundation of water. The second mechanism at work when natural channels are ditched is the reduction in hydraulic resistance, referred to a Manning's "n" value, or roughness coefficient. This resistance to flow is provided by the native grasses and shrubs that occur along the riparian corridor, as well as the roughness of the channel and streambed itself. By ditching a natural, well-vegetated channel, the roughness value drops and slope increases, combining to increase velocity and stream power.

The end result of efforts to dry the meadow has been gully erosion caused by a combination of the two mechanisms of increased slope and reduced roughness coefficient. The byproduct of accelerated velocity is accelerated erosion, both vertical incision and lateral bank erosion. The gully formation indeed served to dry the meadow surface, but to a degree that did not serve those dependent upon forage production for profitability. The desiccation of the landscape in the vicinity of the gullies now allows for the rapid encroachment of sagebrush and other xeric species into areas formerly dominated by wet meadow sedge and rush.

Some water quality data was collected for Ash Creek during a water quality monitoring study conducted between 2003 and 2005. Water quality parameters were collected monthly, if possible, and parameters included flow, temperature, specific conductance, turbidity, bacteria, nitrates, total suspended solids, and total organic carbon. Although water quality parameters were not collected within the project area, one monitoring station was located upstream in Adin and the second was located approximately 2 miles downstream of the project area. It was determined that the bankfull discharge of Ash Creek is approximately 800 cfs, closely following the estimation of the 1.5-year recurrence interval period. This conclusion is based primarily on gauging-station data from Adin, California, with some reference to regional curves for Wyoming, Idaho, and North Dakota. No regional discharge curves for the Great Basin were available. In these cases, the regional curves seem to overestimate the bankfull discharge, possibly due to the fractured basaltic geology of the ACWA region that tends to effectively store a significant percentage of the available runoff.

It was also noted that the upper points of the flood frequency curve do not show a good fit to the regression. It is not known what factors are involved in this inconsistency with natural instantaneous peak discharge volumes. While these points do not remain in line with expected increases in flood volume as recurrence interval increases in the upper range, they do fall into a distinct pattern after divergence with the expected trajectory. Further investigation is required to pinpoint measurement protocols that may have contributed to this phenomenon.

Discrepancies in the calculation of bankfull flow that may arise from the above-mentioned issue are not expected to alter design recommendations as no excavation of a design channel is recommended in the construction specifications.

Recreation

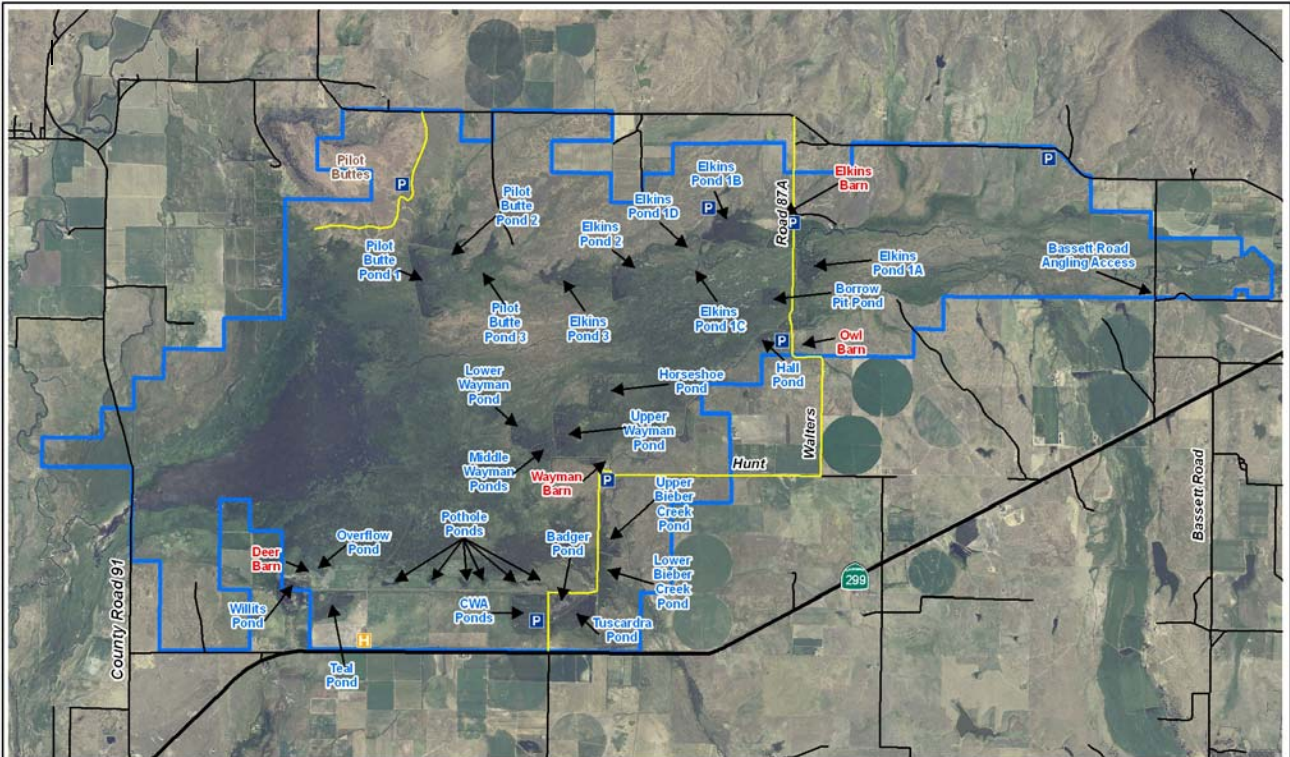
Existing Conditions

ACWA is designated as a Type B Wildlife Area, and public use is subject to regulations as set forth by California Code of Regulations, Title 14, Section 550-551. Current public use is about 3,000 user days per year and includes hunting, fishing, and other forms of compatible wildlife-dependent recreational uses such as bird watching, hiking, and wildlife photography.

ACWA has eight parking lots to accommodate public use. A vehicle tour route has been established for additional wildlife viewing opportunities (Figure 4).

Hunting for authorized species – waterfowl, coots, moorhens, doves, pheasants and snipe – is permitted on Saturdays, Sundays, and Wednesdays during open seasons. Doves may be taken daily during the September dove season and on waterfowl hunt days during the late dove season. Pronghorn antelope may be taken during junior hunts only. Pen-raised pheasant hunts are also

conducted for apprentice junior and women hunters in early September. ACWA has approximately 1,500 hunter user days during the waterfowl and upland game seasons.



— Vehicle Tour Route for Wildlife Viewing
 □ Ash Creek Wildlife Area

VESTRA

SOURCE: NAIP 2005

0 0.5 1 2 Miles

FIGURE 4
 VEHICLE TOUR ROUTE
 FOR WILDLIFE VIEWING
 ASH CREEK WILDLIFE AREA
 MODOC AND LASSEN COUNTIES

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Angling opportunities are limited on ACWA. In cooperation with the Pit River Rod and Gun Club, an annual fishing derby is conducted for hatchery-raised trout at the Bassett Road Angling Access site. Approximately 250 angler use days are expected annually.

Populations/Housing and Transportation/Traffic

Existing Conditions

Two small towns, Adin and Bieber, are located within 3 miles of the project site. In addition, there are a small number of houses that are located directly adjacent to the project area. These houses occur along CR 87A. This road system bisects the ACWA in a north-south direction. The road crosses the floodplain for a distance of roughly 3,000 ft. One house is located just south of the floodplain along CR 87A, and two more houses occur about ¼ mile north of the floodplain along CR 87A. No other road systems occur within the project area.

The residents of the houses along CR 87A typically access their properties via CR 87A from the shortest distance. For example, those living along the northern part of the floodplain access CR 87A from Adin Lookout Road, and those along the southern portion of the floodplain from Highway 299. Occasional farm equipment and vehicle traffic occurs on CR 87A during the summer months. During design-planning surveys, biologists and hydrologists estimated there was on average one vehicle each day observed during a 6- to 8-hour time period.

DFG staff use CR 87A on a daily basis during the summer to conduct activities such as wildlife area monitoring and management.

Land Use/Planning

Existing Conditions

CR 87A is currently owned and maintained by Modoc County. Maintenance is required on the road when high flood flows breach the road prism and cause erosion of the road and culverts. The county grades the road on average of once each year. The rest of the project area is owned by the State of California and managed by DFG. Most all of the wildlife area is managed for wildlife habitat and a limited amount of farming, mostly the production of hay, and livestock grazing occurs each year. DFG has a cooperative agreement with the Pit RCD to contract the haying and grazing leases each year. The wildlife area is zoned Agriculture Preserve in Modoc County.

After acquisition of the property by DFG in 1986, primary land use in the project area has shifted from cattle grazing and hay production to waterfowl and riparian migratory bird habitat. Some areas of ACWA are still grazed and mowed for hay on a contract basis, but these are primarily peripheral areas that are closely controlled to protect resource values. Studies have shown that hay harvest and grazing can be used as management tools to increase waterfowl habitat productivity. The current management structure is likely to continue in the foreseeable future. Hay production and grazing outside the proposed project area poses no threat to project stability.

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Geology/Soils

Existing Conditions

ACWA lies within the geologic province known as the Modoc Plateau and is surrounded by a basin of Tertiary or Miocene volcanic basalt. The project site, however, is predominately Quaternary alluvium in the upper reaches with Quaternary lake deposits dominating the lower valley. Volcanic rock shows surface expression only along the perimeter topographic features that rise above the alluvial plain. Ash Creek is one of many tributaries to the Pit River in the region. The Pit River is the only major river that drains the Modoc Plateau.

Biological Resources

Sources of Information and Methodology

DFG staff has conducted several projects in past years and, in association with these projects, has conducted botanical and wildlife surveys. DFG has a solid understanding of natural resources on the ACWA, and this information was used to develop a design plan and implementation schedule that would avoid biological resources associated with restoration activities. In addition to consulting DFG files and staff, wildlife, botany, and fish surveys were completed in 2008. This information was used to further understand habitat needs of species and evaluate the extent of the restoration benefits to these species.

Wildlife surveys were conducted throughout May and June. During surveys, a biologist walked meandering transects throughout the project area and surveyed isolated wetland areas for nesting species. Binoculars and a spotting scope were used to visually search for nesting species, and individual trees within and adjacent to the project area (e.g. 1/4 mile) were searched for nesting raptors.

A fisheries biologist conducted surveys in late July and early August by visually searching for fish, hand netting, electroshocking, and placing minnow traps. Deeper pools were angled using artificial spinners, and one night survey was conducted. Surveys were conducted between County Road 91 and the Bassett Road Angling Access location.

Botanical surveys were conducted in late June and once in August. Two botanists walked through the habitat types found in the project area and evaluated the potential for rare plants. Higher search intensity was given to higher-quality habitat areas, and special attention was given in surveying and assessing the potential for presence of the two listed species with potential to occur in the region (i.e., Boggs Lake hedge-hyssop and slender orcutt grass). All plant species encountered were identified to the taxonomic level necessary to determine legal status and scientific significance. Plants not readily identified in the field were collected and determinations made later in the Cal State Chico Herbarium.

Existing Conditions

ACWA supports numerous wildlife species. Waterfowl concentrations are at their greatest during spring when arctic nesting geese (i.e., Ross geese, snow geese, and white-fronted geese) rest, loaf, and feed in various areas on the ACWA. Several thousand migratory ducks also occur during the spring. During the summer, these large concentrations of waterfowl have gone to northern breeding areas, and resident species (i.e. mallard, Canadian goose, gadwall) are the most abundant and

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common waterfowl. Several other nesting species such as greater sandhill crane, common snipe, white-faced ibis, and Forster's tern are common on the ACWA. Common grassland birds include western meadowlark, savannah sparrow, and horned lark. The number and diversity of mammals is smaller compared to birds, but pronghorn are commonly observed foraging in the large open expansive areas. Occasionally, mule deer also occur and, although not often visible, the presence (e.g. lodges and burrows) of introduced muskrat occur along the levee areas.

Fish species composition in lower Ash Creek is dominated by an appropriate assemblage of native fishes typical of warmer, lower-gradient riverine habitats in the upper Pit River drainage. Fish sampling in the last century has been infrequent (five studies) and has mostly occurred near the town of Adin. Thirteen species have been recorded in the general area of the project site and include six species of Cyprinids (Sacramento pikeminnow, tui chub, speckled dace, fathead minnow, golden shiner, hardhead). An additional Cyprinid (Pit roach) may also occur but has not yet been detected. Two introduced species are known to occur in lower Ash Creek (green sunfish, mosquitofish), and a third, the brown bullhead, likely occurs. Redband/rainbow trout have been observed immediately upstream of the project site, and surveys conducted as part of this project documented Pit brook lamprey. This species had not yet been documented from earlier fish surveys and requires specialized equipment for effective sampling.

The project study area supports a complex mosaic of intergrading wetland and upland vegetation types. Major plant communities encompassed by the approximately 2,000-acre zone of hydrologic influence include Transmontane Freshwater Marsh, Transmontane Alkali Marsh, Alkali Meadow, Transmontane Alkali marsh/Alkali Meadow Hybrid Zone, Modoc-Great Basin Riparian Scrub, Vernal Pools (undefined type), Upland Sagebrush Steppe, and Non-Native Annual Plant Communities. The distribution and composition of these plant communities varies across the study area and is influenced by soils, hydrology, and disturbance history. Botanical surveys in 2008 revealed the presence of six special-status plants (Lemmon's milk-vetch, Howell's thelypodium, Sheldon's sedge, Great Basin downingia, *Crateagus castlegarensis*). Others may occur in the project site but would require more detailed surveys to document presence.

Appendices C and D identify special-status species and their potential to occur within the project area.

Issues:	Potentially Significant Impact	Less Than Signif. With Mitigation Incorporated	Less Than Signif. Impact	No Impact
• AESTHETICS. Would the project:				
Have a substantial adverse effect on a scenic vista? (By restoring the historic hydrology and attendant vegetative communities, the project is expected to have a positive aesthetic scenic effect.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway? (The project is not along a designated scenic highway.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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Issues:	Potentially Significant Impact	Less Than Signif. With Mitigation Incorporated	Less Than Signif. Impact	No Impact
Substantially degrade the existing visual character or quality of the site and its surroundings? (The opposite will be true. The visual character of the meadow itself will be restored.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area? (The only glare associated with this restoration project would be more sunlight reflecting off water retained in wet meadow areas or in the ponds.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> • AGRICULTURE RESOURCES. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project: 				
Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? (No farmland conversion will occur.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Conflict with existing zoning for agricultural use, or a Williamson Act contract? (No conflicts with zoning or Williamson Act contracts will occur.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use? (No other changes in the existing environment can result in conversion of farmland.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> • AIR QUALITY. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project: 				
Conflict with or obstruct implementation of the applicable air quality plan? (See comment below.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Violate any air quality standard or contribute substantially to an existing or projected air quality violation? (See comment below.)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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Issues:	Potentially Significant Impact	Less Than Signif. With Mitigation Incorporated	Less Than Signif. Impact	No Impact
Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? (See comment below.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Expose sensitive receptors to substantial pollutant concentrations? (See comment below.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Create objectionable odors affecting a substantial number of people? (See comment below.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

This project will not release anything into the atmosphere. There is no evidence that this project will result in a violation of any air quality standard or contribute to an existing or projected air quality violation. It will not expose sensitive receptors to pollutants; alter air movement, moisture, or temperature; cause any change in climate; or create objectionable odors. Any dust generated during construction activities will be mitigated by watering with a water truck.

BIOLOGICAL RESOURCES - IMPACT MECHANISMS

Biological resource surveys within the ACWA have been conducted in the past by DFG staff, and biologists conducted several evaluations during the design phase of this project in the spring/summer of 2008. More surveys are planned for the ACWA, but the initial evaluation was thorough enough to evaluate impacts and propose avoidance, minimization, and mitigation measures.

Vegetation, wildlife, and fishery resources could be directly and indirectly affected by meadow restoration activities. Construction-related impacts could result in the temporary, short-term, or permanent loss of vegetation, wildlife, and fisheries in the project study area. In assessing the magnitude of potential impacts, the following assumptions were made regarding construction-related impacts on vegetation, fish, and wildlife:

- All vegetation could potentially be removed in areas that are used for pond creation and gully fill, resulting in removal of potential wildlife habitat.
- Vegetation adjacent to construction areas could be temporarily disturbed or stressed by heavy equipment, sidelaying of material, or compaction of soil, resulting in potential disturbance of wildlife habitat.
- Aquatic habitat could be temporarily affected by heavy equipment or construction activities, potentially affecting fish and wildlife habitat.
- Noise and other human activities could result in abandoned nest sites, burrows, or dens of wildlife species.

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Wildlife and fisheries resources could be directly or indirectly affected during construction through the following activities:

- Removal of vegetation from excavating,
- disturbing of channel substrate from excavation and equipment movement,
- temporary stockpiling of soil or other materials, and
- noise disturbance from construction equipment.

CRITERIA FOR DETERMINING SIGNIFICANCE

The following criteria were used in determining the level of significance of an impact on biological resources. An impact was considered significant if it would:

- Substantially affect a special-status plant or animal or the species' habitat;
- interfere substantially with the movement of any resident wildlife species;
- substantially affect, reduce the number of, or restrict the range of an endangered species or the habitat of the species;
- substantially diminish the acreage or value of local habitat for wildlife or plants;
- cause the deterioration of existing wildlife habitat;
- adversely affect significant riparian lands, wetlands, or other wildlife habitats;
- result in the filling of jurisdictional wetlands;
- reduce acreage of any agricultural crop that serves as valuable foraging or nesting habitat; or
- introduce or further spread invasive species.

• BIOLOGICAL RESOURCES. Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Signif. Impact	No Impact
Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Special-status species that may be impacted from the proposed project include the greater sandhill crane, Swainson's hawk, Lemmon's milk-vetch, Sheldon's sedge, Howell's thelypodium, Castlegar Hawthorne, Boggs Lake hedge-hyssop, and Pit roach. Potential impacts on each of these species are described below. The project design and timing were structured to avoid and minimize any potential impacts; however, mitigation measures are proposed to ensure impacts on these species are reduced to less than significant.

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Greater Sandhill Crane

Greater sandhill cranes nest throughout the ACWA. Nest locations are highly variable. Any construction-related impacts on sandhill cranes during the nesting season could constitute “take” because the species is listed as threatened under the California Endangered Species Act. This potential impact would be considered significant.

Greater sandhill cranes typically begin nesting on ACWA in early April, and most young fledge by July 15; however, some individual nests have been found after July 15, likely representing pairs that lost a nest during the first attempt and therefore make a second attempt that extends longer into the nesting season. Because of the short construction window (estimated at 90 days), activities would need to start in the summer as soon as cranes have completed nesting (i.e. July 15).

Modoc Sucker

Modoc suckers are a state and federally listed species known to occur in the Pit River Watershed. The species is also known to occur in upper Ash Creek in the headwaters within Ash Valley. Stewart Reid (July 2008 pers. comm.), an expert biologist on Modoc sucker and DFG Fisheries Biologist Paul Chappel (retired) does not believe the species is present in lower Ash Creek (i.e. below Adin). Rather, suckers found in lower Ash Creek have been identified as Sacramento suckers. Based on previous collections and habitat conditions, this project does not have the potential to affect this species.

Swainson’s Hawk

The Swainson’s hawk is listed as a threatened species under the California Endangered Species Act. Swainson’s hawk nest throughout the Great Basin, and individuals historically nest in isolated trees at ACWA. The last Swainson’s hawk nest was documented in the 1990s near the Bean Barn by CR 87A. No nesting Swainson’s hawk have since been observed on the ACWA, although the species has been observed during migration on the wildlife area. The nearest known Swainson’s hawk nest is located approximately one mile from the project area boundary. In general, there are relatively few (three to four pair) Swainson’s hawk nesting in the Big Valley area (Hunt pers. comm.).

Howell’s Thelypodium

Howell’s thelypodium is a CNPS List 1B.2 species. The species was encountered during surveys in 2008 in wet-meadow habitats at two closely juxtaposed sites on the floodplain of Ash Creek approximately .5 miles southwest of the Ducks Unlimited Diversion Structure. Howell’s thelypodium is a perennial herbaceous member of the Mustard Family and occur in moist meadows and seeps. No ground-disturbance activities are planned for this area, but the population may be negatively affected if future habitat conditions change to more mesic conditions.

Sheldon’s Sedge

Sheldon’s sedge is a CNPS List 2.2 species. It was encountered during the surveys in numerous sites in the study area, where it is associated with meadows on the floodplain of Ash Creek, banks of the mainstem and tributary channels, and within the edges of a few of the bermed ponds. The species is a perennial rhizomatous member of the Sedge family. This grass-like species forms dense, almost homogenous colonies in moist habitats. Populations of this species may be directly impacted from ground-disturbance activities, but the overall populations within the ACWA will likely benefit from the raised water table and improved hydrologic conditions in the floodplain.

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Castlegar Hawthorne

Castlegar hawthorne is a CNPS List 3 species. The species is a medium- to large-size shrub of the Rose family. It grows as individuals and in thickets in moist, often rocky loam in riparian settings. There is a relatively homogenous stand growing along the bank of the mainstem of Ash Creek, near the eastern boundary of the study area in the vicinity of the old Ash Creek diversion dam. Direct impacts could occur from construction activities, and changes in the groundwater hydrology may also affect the species.

Lemmon's Milk-Vetch

Lemmon's milk-vetch is a CNPS List 1B.2 species that was encountered at multiple locations on the south side of the Ash Creek floodplain. The species inhabits the moist edges of the floodplain meadow near the transitional ecotone within the drier and topographically higher upland sagebrush steppe habitat. Lemmon's milk-vetch is a sprawling perennial herb in the pea family that inhabits moist habitats. In California, there are nine occurrences of the species recorded with the California Natural Diversity Database. Of these nine occurrences, one is from Lassen County and one is from Modoc County. Populations of Lemmon's milk-vetch may be directly impacted from construction activities. Changes in groundwater hydrology will likely not significantly affect this population as it occurs in areas that are generally at a higher elevation than the hydrologic influence zone.

Boggs Lake Hedge-Hyssop

Boggs Lake hedge-hyssop is a state endangered species and a CNPS List 1B species. The species is not known to occur at the ACWA, but habitat type in the seasonally managed wetlands may be suitable. It is an annual species that typically occurs in vernal pools and along marshy areas in the margins of lakes and reservoirs. Not all areas could be surveyed adequately during 2008, and construction activities conducted in potentially suitable habitat could affect this species if it does occur.

Other Special-Status Species

Several other special-status wildlife species are known to occur or have the potential to occur within the project area. These species include pronghorn, American white pelican, double-crested cormorant, northern harrier, short-eared owl, sharp-shinned hawk, Cooper's hawk, Ferruginous hawk, American peregrine falcon, prairie falcon, long-billed curlew, white-faced ibis, black tern, western burrowing owl, loggerhead shrike, bald eagle, golden eagle, redband trout, pit roach, harhead, northwestern pond turtle, Macoun's buttercup, marsh skullcap, Howell's triteleia, volcanic daisy, Great Basin downingia, and sweet marsh ragwort.

Most all project impacts on these species would be avoided or minimized based on the project design location and timing of construction. In some instances, mitigation measures are provided to ensure impacts are considered less than significant. Brief rationale is provided below for several special-status species that do not require mitigation measures.

Since the project will be constructed during the late summer (i.e. late July through early August), there will be minimal impacts on pronghorn or potential nesting birds (i.e. white-faced ibis, black tern, northern harrier, short-eared owl, loggerhead shrike, long-billed curlew, and short-eared owl). Other special-status birds (American white pelican, Cooper's hawk, sharp-shinned hawk, bald eagle, golden eagle, Ferruginous hawk, American peregrine falcon, and prairie falcon) do not nest in the project area but do forage in the area during the breeding season, migration time periods, or in

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winter. Habitat and prey availability is common elsewhere, and any changes from project activities that may affect habitat will be minimal and will not substantially alter the species foraging requirements. In general, most special-status species will benefit from changes in aquatic habitat and vegetation expected from restoration activities.

Impacts on fish species are not expected to occur. Redband trout is not known to occur in the project area. It is assumed that redband trout may occur in the project area during the winter when water temperatures become colder. The project is expected to decrease water temperature and increase flow during the summer, thereby potentially improving conditions for redband trout. Pit roach occur in the Ash Creek watershed, but any impacts on this species will not result in a substantial reduction in their local populations.

Impacts from restoration activities on certain special-status plants, including Sheldon's sedge, Great Basin downingia, Macoun's buttercup, marsh skullcap, and sweet marsh ragwort, will likely benefit these species as a result of increased "wetland" conditions and increases in the amount of seasonally inundated areas. Other species are considered "upland" plants (Howell's triteleia, volcanic daisy) and occur outside of direct impacts and beyond the zone of hydrologic influence from restoration.

Habitat changes from the restoration will only negatively impact special-status species that prefer grassland or sagebrush communities or muddy/silty aquatic conditions within gullied streams. After project activities, these habitat types will be decreased. One bird species, the loggerhead shrike, may be impacted. During repeated wildlife observations during the nesting season, however, only one loggerhead shrike was observed. It is unknown if this species is nesting in the ACWA.

Impact W-1. Potential Impact on Nesting Greater Sandhill Cranes and Swainson's Hawk (Less Than Significant). The project could potentially cause the loss of greater sandhill crane and Swainson's hawk nest(s) if the species are found nesting near or within the project area. These impacts could occur from disturbance by construction activities between April 1 through August 15 which could cause the destruction of eggs/young or abandonment of active nest(s). DFG Code 3503.5 prohibits the destruction of raptor nests, and any loss of eggs or individuals would be considered a significant impact. Additionally, impacts on these two species would be considered "take" under the California Endangered Species Act. These potential impacts, however, will be reduced to less than significant by adopting the following mitigation measures:

Mitigation Measure W-1. Conduct pre-construction surveys for greater sandhill crane if construction activities will occur before August 1. Greater sandhill cranes typically begin nesting on ACWA in early April, and most young fledge by July 15. However, some individual nests have been found after July 15, likely representing pairs that lost a nest during their first attempt, and their second attempt therefore extends longer into the nesting season. Because of the short construction window (estimated at 90 days), activities will need to start in the summer as soon as cranes have completed nesting (i.e. late July). A qualified wildlife biologist will monitor the proposed construction areas during the later part of the nesting season (July) to determine if any cranes are still nesting. Once the biologist determines that cranes are no longer nesting within the project area, construction activities may begin, and no further mitigation measures would be required.

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Mitigation Measure W-2. Conduct pre-construction surveys for Swainson's Hawk if construction activities will occur before August 1. Swainson's hawk typically begins nesting in the Big Valley area in early May, and most young fledge by mid-August. However, some individual nests may be active after August 15, likely representing pairs that lost a nest during the first nest attempt, consequently the second attempt extends longer into the nesting season; or successful pairs that have successfully fledged young but are still in the post-fledging dependency period and "attached" to the nest site. Because of the short construction window (estimated at 90 days), activities will need to start in the summer as soon as possible (i.e. late July). A qualified wildlife biologist will monitor the proposed construction areas during the latter part of the nesting season (July) to determine if Swainson's hawks are nesting. If the biologist determines that no Swainson's hawks are nesting within .5 miles of the construction areas, no further mitigation is required.

Impact W-3. Potential Impacts on Special-Status Plants (including Lemmon's milk-vetch, Castlegar hawthorne, Boggs Lake hedge-hyssop, and Howell's thelypodium). The project could potentially cause the loss of individuals and/or colonies of the above special-status plant species. These impacts could occur from direct disturbance during construction activities or from changes in the groundwater hydrology and resulting vegetative responses as a result of restoration of the project site. The loss of individuals and/or colonies of these species could be considered a significant impact if a substantial portion of the local population is affected. However, this potential impact has been reduced to a less than significant level by adopting the following mitigation measure:

Mitigation Measure W-3. Conduct pre-construction surveys for special-status plant species in ground disturbance areas prior to construction. Prior to construction in ground-disturbing areas, wet meadow edge habitat, and large vernal pools/seasonally managed wetlands, a qualified botanist familiar with the identification of special-status plant species will conduct presence/absence surveys for Lemmon's milk-vetch, Castlegar hawthorne, Boggs Lake hedge-hyssop, and Howell's thelypodium. If any of these species are found in ground-disturbance areas, construction will avoid or minimize impacts if feasible. If construction activities cannot avoid Lemmon's milk-vetch colonies or minimize impacts on them, the upper 1 to 4 inches of soil will be stockpiled and replaced as the top soil layer after construction to replace fragmented plant parts and seeds potentially present in the soil profile. Populations of Sheldon's sedge that cannot be avoided will be excavated for propagation and/or direct planting in "new" moist sites, such as banks of the design channels or margins of newly created wetland areas. Individual Castlegar hawthorne shrubs will be avoided if possible. If avoidance is not feasible, individual shrubs will be relocated, or fruits/seeds and/or cuttings will be used for planting in suitable habitat within the project area. If Boggs Lake hedge-hyssop is found, construction activities will avoid direct impacts on this species. If it is found and cannot be avoided, DFG will be consulted for appropriate actions. If none of the above special-status plant species are found during surveys, no further mitigation is required.

Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

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Substantial statewide decline of riparian communities in recent years has increased concerns regarding dependent plant and wildlife species, leading state and federal agencies to adopt policies to arrest further loss. Riparian vegetation has a variety of functions such as providing bank stabilization, erosion control, and wildlife habitat. The DFG has adopted a no-net-loss policy for riparian habitat value. In addition, the U.S. Fish and Wildlife Service (USFWS) mitigation policy identifies California's riparian habitats in Resource Category 2 for which no net loss of existing habitat value is recommended (46 FR 7644, January 23, 1981).

Impact V-1. Potential Impact on Seasonal Wetlands and Riparian Habitat in the Project Area (Less Than Significant). The project would not have a substantial adverse effect on seasonal wetlands and riparian habitat based on the project design. Although disturbance of seasonal wetlands and riparian vegetation within the gully is necessary, the long-term benefits of increased wetland conditions and riparian vegetation along Ash Creek is considered beneficial. Additionally, nearly all riparian vegetation that is removed within the gully will be replanted to enhance stabilization and increase structural diversity. Therefore, although the project will temporarily result in the loss of seasonal wetlands and a small amount of riparian habitat, these impacts will be minimized by following the guidelines set forth in the project design and required permits for the project (see below mitigation measure for Impact V-2). Therefore, based on the amount of habitat that will be disturbed, the implementation of MM-V1 (see below) and long-term benefits associated with the project (i.e., increased wetland acreage and conditions, increased riparian conditions), the impacts to these resources are considered less than significant.

Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

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Impact V-2. Short-Term Disturbance of Waters of the United States from Construction Activities (Less Than Significant). The project will have a short-term effect on federally protected wetlands (including other waters of the United States). Ash Creek, a perennial drainage, is located within the construction area and would be considered "other waters" of the United States subject to jurisdiction under section 404 of the CWA. In addition, DFG regulates activities that would interfere with the natural flow of, or substantially alter the channel, bed, or bank of, a lake, river, or stream. These activities are regulated under CDFG Code Section 1601 for public agencies and Section 1603 for private individuals. Requirements to protect the integrity of biological resources and water quality are often conditions of streambed alteration agreements. Conditions that may be required by DFG include avoidance or minimization of vegetation removal, use of standard erosion-control measures, limitations on the use of heavy equipment, limitations on work periods to avoid impacts on fisheries and wildlife resources, and requirements to restore degraded sites or compensate for permanent habitat losses. Impacts to Ash Creek are considered less than significant because the Pit RCD has incorporated the following Mitigation Measures into the proposed project:

Mitigation Measure MM-VI: Comply with state and federal permit conditions. The Pit RCD will coordinate with the U.S. Army Corps of Engineers (Corps) to confirm that the work is authorized under a Nationwide Permit (NWP). The Pit RCD will also coordinate with DFG to

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obtain the required streambed alteration agreements. Based on past similar projects and consultation with the Corps, the project will qualify for a NWP 27.

Under the NWP 27, the Corps authorizes the restoration of pool and riffle patterns and restoration of riparian areas. The Pit RCD will incorporate all state and federal permit conditions into the final project design and site restoration plans.

Mitigation Measure MM-V2: Restore drainage topography to naturally functioning conditions. The Pit RCD will require contractors to follow the supervision of the restoration design consultant responsible for implementing the restoration design plan in order to ensure that naturally functioning drainage topography occurs following construction. Most of the “new” channels that will transport flow within the project area are remnant stream channels within the meadow that are well vegetated and occurred prior to gully incisement. These channels will function to restore the stream and floodplain to natural conditions. A small portion of design channel will be constructed in order to redirect the stream to these natural channels. Detailed analysis of the design channel was calculated and presented in the restoration design plan.

Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

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Impact W-4: Temporary Disturbance of Common Wildlife and Fish Species and Interference with Migratory Corridors (Less than Significant). The proposed project will disturb the movements of native resident wildlife and fish species on the project site. This disturbance will result from construction activities. In addition, the proposed project will temporarily affect the natural flow of water in Ash Creek when the flow is redirected to the remnant channels at the start of the construction period. However, water will continue to flow downstream to provide habitat for downstream resident fish and wildlife species in the remnant channel(s). The remnant channels will allow the stream to function properly to transport bedload and suspended sediment, provide natural gravel for fish, and eliminate downstream scour from heavy flood flows. The gully channel will no longer be receiving flow and will slowly dry as water seeps into the ground. Because of this, some resident fish may become stranded as pools dry and become isolated. These fish may then be potentially impacted from desiccation, predation, or direct impacts from construction activities. Significant impacts could occur if construction activities affected a substantial portion of the local populations. These potential impacts, however, will be reduced to less than significant by adopting the following mitigation measure. Because the flow will be completely redirected away from the gully, it is not possible to slowly decrease the flow in the gully. The gully will continue to have water as it slowly dries, allowing the following mitigation measure to be performed:

Mitigation Measure -W4. Conduct rescue surveys for fish and western pond turtle stranded in aquatic habitat within the incised gully channel and relocate them to undisturbed areas. Rescue surveys will be conducted for fish and northwestern pond turtle that become stranded within the incised gully channel once flow has been redirected to the remnant channels on the meadow floodplain. It is assumed that most fish and turtles will move to other areas when aquatic conditions become dry. However, in case they do not or cannot move, a

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qualified wildlife biologist familiar with the biology of these species will conduct surveys at appropriate times to detect and capture them. The biologist will also obtain and/or hold the necessary permits to capture and move the fish and turtles to suitable habitat. If no fish or turtles are found within the aquatic habitat, no further mitigation would be required. No further mitigation measures are required once surveys have been conducted and fish and turtles have been relocated.

Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? (The project would not conflict with any local policies or ordinances protecting biological resources such as preservation policies or ordinances. Modoc County does not have a county tree ordinance.)

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Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? (The proposed project will not conflict with the provisions of any habitat conservation plans, natural community conservation plans, or other approved local, regional, or state habitat conservation plans.)

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CUMULATIVE EFFECTS

The proposed project has accepted the mitigation measures proposed herein. The short-term impacts to any wildlife, fish, and the riparian corridor caused by construction activities are relatively insignificant when compared to the long-term benefits of reducing continued degradation of the aquatic and upland habitat and associated impact on wildlife, riparian vegetation, and fisheries resources from existing conditions. The restoration of the functioning condition of the stream and floodplain will result in numerous resource benefits (see Project Description).

Two other restoration projects in the general area of the proposed project are related and will beneficially affect the proposed project. The Pit RCD implemented restoration projects on Dutch Flat Creek and the North Fork of Ash Creek in Round Valley located approximately 10 miles upstream of the project site. Both projects involved improving water-quality conditions with either bank stabilization techniques or channel morphology changes. Within the ACWA, one other project, replacement of two bridges at CR 87A, is proposed for 2010. When considered with this project, impacts on biological resources are minimal and would not result in cumulative impacts.

CULTURAL RESOURCES - IMPACT MECHANISMS

Cultural resources were surveyed in early 2000 associated with seasonal wetland development projects on ACWA. During these surveys, prehistoric sites were located and mapped for DFG. These locations were avoided when designing this project. However, the entire floodplain of this proposed project has not yet been surveyed. Therefore, other prehistoric sites may be present and be affected from restoration activities. These effects could result from excavating the pipeline, ponds, and diversion structures, or filling gullies. Indirect effects could also result from vegetation changes resulting from restoration activities (i.e. conversion of grassland and sagebrush habitat to wet meadow). It is possible, although highly unlikely, that noncultural soil deposits have buried cultural sites. If a cultural deposit is uncovered during construction activities, potential construction-

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related impacts on cultural resources could include the following:

- Discovery of human remains of Native American origin is highly unlikely due to the location of the work being within a wet meadow habitat type.
- There is a potential for discovery of culturally significant items during earth-disturbing activities.

CRITERIA FOR DETERMINING SIGNIFICANCE

The criteria for determining significance of impacts to cultural resources generally follow the State CEQA Guidelines, with DFG acting as the lead agency. The criteria for determining significance of impacts to historical properties fall under the U.S. Bureau of Reclamation, serving as the lead agency for the National Environmental Policy Act.

• CULTURAL RESOURCES. Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Signif. Impact	No Impact
Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5? (See below mitigation measures.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5? (See below mitigation measures.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? (See below mitigation measures.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Disturb any human remains, including those interred outside of formal cemeteries? (See below mitigation measures.)	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Impact CR-1: Potential Adverse Change in the Significance of a Historical and/or Archeological Resource (Less Than Significant). Restoration and construction activities could potentially cause an adverse change in the significance of a historical and/or archeological resource. These adverse changes could result from ground-disturbing activities or changes in vegetation communities. These potential impacts, however, will be reduced to less than significant by adopting the following mitigation measure:

Mitigation Measure CR-1: Review archeological records, conduct preconstruction archeological surveys, and prepare an archeological resource management report. Prior to construction activities, a qualified archeologist will review the archeological records compiled by the Northeast Information Center, Chico, and the DFG and conduct a complete heritage-resource

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inventory of the area of potential effects (APE). The APE includes the active work zone and access routes as well as meadow areas to be affected by restored groundwater elevations. The APE will be flagged prior to initiation of survey work with flagging to facilitate survey. A complete inventory entails a systematic pedestrian examination of the surface of all identified portions of the project area. It may also require resurveying previously inventoried properties or “spot-checking” to ensure the adequacy of previous coverage. Beyond the exposure of the ground surface for assistance in ground visibility, no subsurface excavation is authorized.

The archeologist will also record sites utilizing “Historic Property Recording Specification” format. All newly discovered prehistoric, ethnographic, and historical heritage resources encountered within and directly adjacent to the project areas(s) will be recorded. Boundaries of all heritage resources will be identified using red- and black-striped flagging and/or other appropriate means as agreed to with the F/D HPM, e.g. Area Controlled Signs. Heritage resource sites will be recorded using State Historic Preservation Office (DPR – 523) site forms. Site boundaries will be recorded using a resource-grade Global Positioning System (GPS). The archeologist will also obtain California State Trinomial numbers for sites in the project area for inclusion in the final report. In-Situ Artifact Recording procedures will be followed during both inventory and site-recording activities. No collection of artifacts is authorized.

A draft report will be submitted to and reviewed by DFG and the Pit RCD prior to construction. The inventory report will conform to guidelines in the State of California Department of Parks and Recreation “Archaeological Resource Management Reports: Recommended Contents and Format” or Secretary of Interior’s “Standards & Guidelines for Archaeology and Historic Preservation: Reporting Identification Results.” This includes preparing a Heritage Resources Inventory Report (HRIR) with site records attached for each separate undertaking. The report shall describe the results of the prefield literature search and sensitivity assessment, methodology, and results of inventory efforts. At minimum, the report will include vicinity, project location, inventory coverage, previous coverage, site location, and isolated data figures.

Impact CR-2: Potential to Inadvertently Disturb Human Remains During Ground-Disturbing Activities (Less Than Significant). Although not expected, ground-disturbing activities have the potential to disturb human remains. This potential is considered low, however, because most construction is located in a habitat type (wet meadow) that was not regularly used for burying humans due to its wet nature and difficulty of digging. This potential impact is considered less than significant because the project proponent has incorporated the following mitigation measures:

Mitigation Measure CR-2: State compliance. Whenever human remains of Native American origin are discovered, close compliance with state requirements will be followed. This includes immediate cessation of work and notification of the appropriate authorities.

Impact CR-3: Potential for Damage to Buried Archaeological Sites (Less Than Significant). Although not expected, ground-disturbing activities have the potential to damage buried archaeological sites. This potential is considered low, however, because the habitat type (wet meadow) was not regularly used to bury human remains due to its wet nature and difficulty of digging. This potential impact is considered less than significant because the project proponent has incorporated the following mitigation measure:

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Mitigation Measure CR-3: Work stoppage. Immediately upon discovery of any cultural resources, work will be stopped in the immediate area. Work will only be started again upon notification of the appropriate authorities and approval for restart.

• GEOLOGY AND SOILS. Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Signif. Impact	No Impact
Expose people or structures to potential substantial adverse effects, including the risk of loss, injury or death involving: (N/A)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42. (This project is not located in a known earthquake fault.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Strong seismic ground shaking? (N/A)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Seismic-related ground failure, including liquefaction? (N/A)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Landslides? (N/A)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Result in substantial soil erosion or the loss of topsoil? (Restoration efforts to improve floodplain function by filling gullies and restoring stream flow to the meadow surface will decrease current rates of erosion.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse? (The project will actually improve soil stability.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Be located on expansive soil, as defined in Table 18.1-B of the Uniform Building Code (1994), creating substantial risks to life or property? (The project is not located on expansive soil.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water? (N/A)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

HAZARDS AND HAZARDOUS MATERIALS - IMPACT MECHANISMS

Potential construction-related impacts of hazardous materials could include the following:

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- Accidental spill related to the fueling or servicing of construction equipment.
- Accidental spill related to construction equipment that leaks fuel or other fluid due to disrepair, onsite accident, collision, or other means.
- Leaking containers.
- Wildland fire caused by construction equipment or crew.

CRITERIA FOR DETERMINING SIGNIFICANCE

The criteria for determining significance of impacts of various hazardous materials possible follow CEQA, Occupational Safety and Health Administration (OSHA) and Environmental Safety and Health (ES&H) agencies.

HAZARDS AND HAZARDOUS MATERIALS. Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Signif. Impact	No Impact
Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? (This project does not cause a substantial hazard in the area.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Impact HM-1: Potential Impacts on Terrestrial and Aquatic Resources from Hazardous Materials (Less Than Significant). Impacts on aquatic and terrestrial resources could potentially result from the accidental release of hazardous materials into creeks or ground surfaces. This impact is considered less than significant because the project proponent has proposed the following mitigation measure:

Mitigation Measure HN-1: Fueling and Maintenance outside of riparian and aquatic areas. Refueling and equipment maintenance will be conducted in designated areas outside of the riparian and aquatic zones. The designated area will be located in an upland area on “flat” ground.

Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? (No existing or proposed schools occur within 2 miles of the project area.)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? (This project is not located in a hazardous materials site.)

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For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area? (This project is not located near a public airport.)

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For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area? (This project is not located in the vicinity of a private airstrip.)

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Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? (This project does not conflict with any emergency response or evacuation plan.)

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Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands? (The project area is managed for wildlife habitat, cattle grazing, and haying, and will remain in these uses resulting in no negative change in fire hazard as a result of the project. Project construction will be in moist channel areas where there is minimal fire hazard. A water truck will be onsite during construction.)

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• HYDROLOGY AND WATER QUALITY.
Would the project:

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Violate any water quality standards or waste discharge requirements? (The project will cause no violations of any water quality standards.).

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This project is expected to improve water quality parameters including temperature, dissolved oxygen, sediment, and turbidity. The poor water quality attribute of high summer temperatures should be improved by augmented summer flows. The increased volume of summer flows, a narrow, deeper channel, and expected improvement of riparian vegetation and associated shade should lower summer water temperatures. Decreased temperature and increased hyporheic exchange within the floodplain will result in higher dissolved oxygen levels. By removing flood flows out of channels with unstable, unvegetated gully walls, and restoring floodplain function, the current severe erosion and turbidity should decrease. Before construction begins, surface water flow will be diverted into the remnant channel so work will not occur in an active flowing channel.

Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)? ☐ ☐ ☐ ☒

This project is expected to increase groundwater recharge during winter flows for slower release throughout the drier summer. The groundwater table is expected to rise to within 1.5 ft of the meadow surface, reducing wide seasonal fluctuations in water levels and providing for late winter/spring saturation of the meadow.

Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or off-site? ☐ ☐ ☒ ☐

This project is a stream channel and meadow restoration activity. One of the objectives of the project is to substantially alter the existing drainage pattern because the existing pattern is degraded and “trending” toward more degradation. However, the project has been designed so that little to no erosion will occur after the gully is filled and the remnant stream channels become reconnected to the floodplain.

Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site ☐ ☐ ☒ ☐

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This project is a stream channel and meadow restoration activity. One of the objectives of the project is to improve absorption rates, drainage patterns, and the rate and amount of runoff. Absorption rates would be improved by elevating the stream channel out of its current gullied depth back onto the meadow elevation. This in turn is expected to reverse the vegetative trend from xeric species and bare, compacted soils to a vigorous community of wet meadow species. The root system of this community, as well as the restored function of the floodplain, is expected to increase absorption rates, thereby attenuating flood flows and increasing summer base flows. This improved timing of the drainage pattern, and the rate and amount of runoff, is another project objective. No significant change in drainage pattern locations is expected. Flows will be returned to historic remnant channels on the surface of the meadow, which have been abandoned due to the relatively recent (last 50 years) channel incision.

Create or contribute runoff water, which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff? (This project will attenuate storm water flows by allowing higher flows to access the floodplain and result in greater absorption and reduced velocity.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Otherwise substantially degrade water quality. (See response to "a" above.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map? (There is no housing in the proposed project area.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Place within a 100-year flood hazard area structures which would impede or redirect flood flows? (No structures are proposed for this project.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam? (There are no structures or people in the proposed area that could be affected.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Inundation by seiche, tsunami, or mudflow? (The proposed project will have no impact in this area.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<ul style="list-style-type: none"> LAND USE AND PLANNING. Would the project: 	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Signif. Impact	No Impact
Physically divide an established community? (There is no community established in the area. The closest communities are Adin and Bieber, which are approximately 2 to 3 air miles away.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect? (See below discussion.)

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The project area is currently zoned Agriculture Preserve. Land-use protection measures for this site are intended to maintain agricultural areas. Agricultural uses will be maintained and enhanced by the project objectives of restoring the functionality of the floodplain and productivity of the meadow. Grazing management will be coordinated between the private lands, National Resources Conservation Service, and Fall River RCD.

The proposed design plan initially recommended the removal of CR 87A. However, DFG felt this road system was needed to be maintained for a variety of reasons, so the final design plan recommended changing the access of CR 87A from year-round to seasonal. Since Modoc County currently is responsible for CR 87A maintenance, they have agreed to remove CR 87A from their year-round maintained road list. However, CR 87A will be still passable during most of the year and only affect motorists during flood events.

Conflict with any applicable habitat conservation plan or natural community conservation plan? (There are no conflicts because these plans are not present on the site.)

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• MINERAL RESOURCES. Would the project:

Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? (No known mineral resources are known to occur on the project area, and completion of the project would not cause their loss if they did occur.)

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Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? (No locally important mineral resources are delineated on any local plans.)

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• NOISE. Would the project result in:

Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Signif. Impact	No Impact
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Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

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The construction portion of the project will not change current noise levels. Noise from heavy equipment during construction will not be greater than truck noise. The noise easily disperses in the large meadow systems where there are no people.

Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? (There are no people in the construction area.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? (No noise made from the project will be permanent.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? (See explanation A.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels? (N/A)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? (N/A)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
• POPULATION AND HOUSING. Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Signif. Impact	No Impact
Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of road or other infrastructure)? (This project will not affect population or housing because it is not in a community with residences.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere? (This project will not affect population or housing because it is not in a community with residences.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? (This project will not affect population or housing because it is not in a community with residences.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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PUBLIC SERVICES. Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Signif. Impact	No Impact
Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Fire protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Police protection?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Schools?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Parks?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Other public facilities?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Restoration of the site will limit road access across CR 87A during flood flows. This may cause some minor changes in the amount of time firetrucks, police, or individuals using the ACWA would travel if using CR 87A. However, since CR 87A is a dirt road, the project proponent is not aware of the local firetrucks or police using this road as a means to increase response time to their duties. Individuals recreating within ACWA will have to travel around using the paved county roads to the access points on the north and south ends of CR 87A if access is needed during flood flows. However, it is anticipated that access during these times will be minimal when compared to the actual use and need for access. Few people, other than DFG staff, use CR 87A in the project area for access.

RECREATION. Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Signif. Impact	No Impact
Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated? (The project may increase the use by tourists or people recreating within ACWA due to increased visual aesthetics, habitat improvements, or increases in wildlife concentrations. However, these potential increases would be minimal as the ACWA is remote and does not attract numerous visitors from the local community or noncommunity members.)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

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Does the project include recreational facilities or require the construction or expansion of recreational facilities which have an adverse physical effect on the environment? (The project does not include recreational facilities nor require their construction or expansion.)

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There is no evidence that the project will directly affect existing recreational opportunities. However, one expected benefit of the project is improved fish and wildlife habitat, which may result in improved hunting and fishing opportunities for the public. DFG currently manages the timing and duration of these activities and has the authority to change them if impacts are occurring as a result of this project.

• TRANSPORTATION / TRAFFIC. Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Signif. Impact	No Impact
Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)? (The project will not cause an increase in traffic.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways? (No service standard will be exceeded.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks? (No air traffic patterns will be altered.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)? (See comment below.)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Result in inadequate emergency access? (See comment below.)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Result in inadequate parking capacity? (No parking capacity will be affected.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)? (No alternative transportation plans will be affected by the project.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

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This project will not substantially increase hazards or result in inadequate emergency access. However, it will slightly change how motorists will use CR 87A. The restoration will result in slight flooding (1 inch to 1 ft) of CR 87A during flood events. Even at this flooding, the road will be “hardened” so that a vehicle could still pass during a flood event, although that route would not be recommended. Using CR 87A under this condition is not required because there are two other routes (one to the east and one to the west) on county roads that allow motorists to cross the creek and floodplain during flood flows. There will be an insignificant short-term increase in vehicle trips during the construction phase of the project, but this estimate is minimal (ca. four vehicles per day for 3 months).

• UTILITIES AND SERVICE SYSTEMS. Would the project:	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Signif. Impact	No Impact
Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? (N/A)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? (See below comment.)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? (This project will not result in the construction of new storm water drainage facilities.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed? (In making this determination, the District shall consider whether the project is subject to the water supply assessment requirements of Water Code Section 10910, et. seq. (SB 610) and the requirements of Government Code Section 664737 (SB 221).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

The proposed project will result in the installation of two pipelines to convey water that is currently being conveyed through existing stream and gullied channels. The pipeline locations have been designed to avoid and minimize impacts on the environment, and construction will occur at a time to avoid impacts on biological resources.

The project is expected to benefit the water supply by increasing the water within the meadow and groundwater.

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Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments? (N/A)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs? (There will be no solid waste disposal needs. The earth that will be excavated will be used in the project itself.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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Comply with federal, state, and local statutes and regulations related to solid waste? (N/A)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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<ul style="list-style-type: none"> MANDATORY FINDINGS OF SIGNIFICANCE 	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Signif. Impact	No Impact
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Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; substantially reduce the number or restrict the range of an endangered, rare or threatened species; or eliminate important examples of the major periods of California history or prehistory?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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As mentioned, the objective of the project is to improve the quality of the environment by restoring the water table, aquatic habitat, and terrestrial habitat within the project area. It is believed that the gullies in the meadow have formed due to over a century of land-use practices that did not consider stream and meadow morphological principles (i.e. roads, culverts, bridges, farming, and overgrazing). These practices caused the current degraded situation that the project seeks to address. The project will improve the quality of the habitat, benefiting populations of fish and wildlife species.

Does the project have the potential to achieve short-term environmental goals to the disadvantage of long-term environmental goals?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
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The pond-and-plug technique used in this restoration is a long-term, sustainable solution to degradation-related problems in the area. The technique addresses the root problem - loss of channel access to the floodplain and the subsequent dewatering of the meadow. By obliterating the gully and restoring the natural functionality of the system, the ecosystem will be able to maintain its environmental integrity over the long term, naturally adjusting to local, regional, and long-term climatic variability. Long-term benefits expected from this project include: transition from arid vegetative species like grasses and shrubs to a community of wet meadow species, increased

absorption rates and groundwater levels, improved timing of drainage patterns resulting in attenuated flood flows, and increased summer base flows.

Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)

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The Pit RCD conducted a Watershed Management Strategy in 2006 to assess natural resource issues and provide a strategy to improve those resource conditions. All stakeholders within the Pit RCD boundary were engaged for input, including DFG, and the resulting report was successful in identifying actions to improve resource conditions such as poor water quality and degraded habitat for fish and wildlife. Both DFG and the Pit RCD have implemented projects to improve resource issues. There is only one known project planned in the general area of this proposed project that has the potential to impact water quality, biological, and archeological resources. This project is sponsored by Modoc County and includes the replacement of two bridges on CR 87A. The project applicant and DFG have met with Modoc County and discussed the two projects. Both projects will incorporate similar measures to avoid, minimize, and mitigate impacts on the environment. It is unknown if the proposed projects may occur during the same year, but if they did, any potential impacts, when combined from each project, will still be less than significant. The bridge replacement footprint is a small fraction on the scale of this project and will not add any project effects or constraints. In fact, this proposed project eliminates the need for the second (most northern) bridge to be replaced by Modoc County, thereby saving funds and reducing any impacts associated with the replacement of that bridge.

Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? (Since there is little human activity in the area, and the project is in accordance with current uses of the area, this project does not have environmental effects which will cause direct or indirect adverse effects on human beings.)

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Appendix A
Photographs

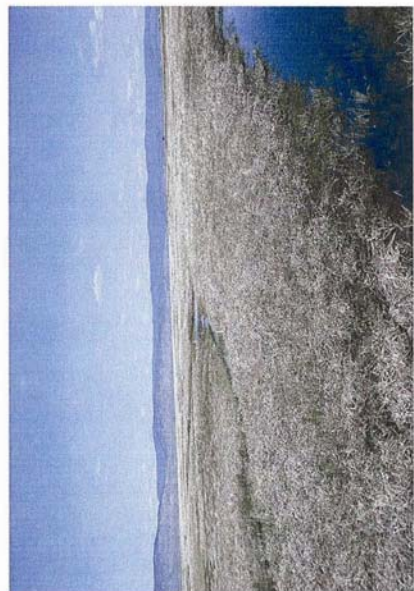
Photo Comparisons
Project Name: Ash Creek Wildlife Area Restoration Project



1. Aerial photo of incised gullies w/ dessicated landscape.



3. End of intact channel, headcut in background.



2. Upstream of incised gullies in pristine reach.



4. Incised and channelized reach (see left center, photo 1).

Photo Comparisons

Project Name: Ash Creek Wildlife Area Restoration Project



5. Headcut initiation point.



7. Gully formation just below headcut point.



6. Headcut initiation point.



8. Lateral expansion of incised gully.

Appendix B
ACWA Cut and Fill Balance Worksheet

Appendix B POND SIZES AT ASH CREEK WILDLIFE AREA RESTORATION PROJECT		
Borrow Site Site No.	Pond (square ft)	Pond (acres)
1	176,368	4.0
2	353,795	8.1
3	574,989	13.2
4	459,461	10.5
5	118,907	2.7
6	143,281	3.3
7	140,684	3.2
8	148,583	3.4
9	319,725	7.3
10	130,871	3.0
11	71,802	1.6
12	404,350	9.3
13	263,713	6.1
14	170,933	3.9
15	346,252	7.9
16	67,709	1.6
17	288,162	6.6
18	526,142	12.1
19	372,113	8.5
20	427,504	9.8
21	135,244	3.1
22	116,493	2.7
23	163,595	3.8
24	99,907	2.3
25	164,092	3.8
26	149,593	3.4
27	55,888	1.3
28	156,661	3.6
29	150,793	3.5
30	82,557	1.9
31	61,906	1.4
32	59,970	1.4
33	49,637	1.1
34	49,373	1.1
35	49,854	1.1
36	57,014	1.3

37	46,248	1.1
38	73,497	1.7
39	70,592	1.6

Appendix C				
SPECIAL-STATUS WILDLIFE SPECIES WITH POTENTIAL TO OCCUR IN THE PROJECT				
Common Name Scientific Name	Status * Federal/State	California Distribution	Habitats	Pote
American white pelican <i>Pelecanus erythrorhynchos</i>	--/SSC	Historically, nested at large lakes throughout California; only breeding colonies in the state occur at lower Klamath National Wildlife Refuge, Siskiyou County, and at Clear Lake, Modoc County; winters along the California coast from southern Sonoma County south to San Diego County; inland, occurs at the Salton Sea, inland from the San Francisco Bay through the Delta region, and in areas in Kings, Kern, Riverside, and Imperial Counties and the Sacramento Valley	Freshwater lakes with islands for breeding; inhabits river sloughs, freshwater marshes, salt ponds, and coastal bays during the rest of the year	Known 1 10)occas managed young h habitat o
Double-crested cormorant <i>Phalacrocorax auritus</i>	--/SSC	Winters along the entire California coast and inland over the Coast Ranges into the Central Valley from Tehama County to Fresno County; a permanent resident along the coast from Monterey County to San Diego County, along the Colorado River, Imperial, Riverside, Kern, and King Counties, and the islands off San Francisco; breeds in Siskiyou, Modoc, Lassen, Shasta, Plumas, and Mono Counties; also breeds in the San Francisco Bay Area and in Yolo and Sacramento Counties	Rocky coastlines, beaches, inland ponds, and lakes; needs open water for foraging, and nests in riparian forests or on protected islands, usually in snags	Known 1 forage in wetlands onsite.
Osprey <i>Pandion haliaetus</i>	MIS/SSC	Nests along the north coast from Marin County to Del Norte County, east through the Klamath and Cascade Ranges, and the upper Sacramento Valley; important inland breeding populations at Shasta Lake, Eagle Lake, and Lake Almanor and small numbers elsewhere south through the Sierra Nevada; winters along the coast from San Mateo County to San Diego County	Nests in snags or cliffs or other high, protected sites near the ocean, large lakes, or rivers with abundant fish populations	Low; like wetlands suitable 1 onsite
White-faced ibis <i>Plegadis chihi</i>	--/SSC	Both resident and winter populations on the Salton Sea and in isolated areas in Imperial, San Diego, Ventura, and Fresno Counties; breeds at Honey Lake, Lassen County, at Mendota Wildlife Management Area, Fresno County, and near Woodland, Yolo County; winters in Merced County and along the Sacramento River in Colusa, Glenn, Butte, Sutter, and Yolo Counties	Prefers freshwater marshes with tules, cattails, and rushes, but may nest in trees and forage in flooded agricultural fields, especially flooded rice fields	Known 1 managed wildlife 2 last ten y region d1
Sage grouse <i>Centrocercus urophasianus</i>	MIS/SSC	Great Basin lands in eastern California in Modoc, Lassen, and northern Inyo Counties	Dependent on sage-brush (<i>Artemisia tridentata</i>) for food and cover; restricted to flat plains or rolling hills	Not kno to occur sighting
White-tailed kite <i>Elanus leucurus</i>	--/FP	Lowland areas west of Sierra Nevada from head of Sacramento Valley south, including coastal valleys and foothills to western San Diego County at the Mexico border	Low foothills or valley areas with valley or live oaks, riparian areas, and marshes near open grasslands for foraging	Known 1 on one k winter (f

Appendix C SPECIAL-STATUS WILDLIFE SPECIES WITH POTENTIAL TO OCCUR IN THE PROJECT				
Common Name Scientific Name	Status * Federal/State	California Distribution	Habitats	Pote
Bald eagle <i>Haliaeetus leucocephalus</i>	T/E,FP	Nests in Siskiyou, Modoc, Trinity, Shasta, Lassen, Plumas, Butte, Tehama, Lake, and Mendocino Counties and in the Lake Tahoe Basin; reintroduced into central coast; winter range includes the rest of California, except the southeastern deserts, very high altitudes in the Sierras, and east of the Sierra Nevada south of Mono County; range expanding	In western North America, nests and roosts in coniferous forests within 1 mile of a lake, a reservoir, a stream, or the ocean	Known 1 observec are know
Golden eagle <i>Aquila chrysaetos</i>	FSS/SSC, FP	Foothills and mountains throughout California; uncommon nonbreeding visitor to lowlands such as the Central Valley	Cliffs and escarpments or tall trees for nesting; annual grasslands, chaparral, and oak woodlands with plentiful medium and large-sized mammals for prey	Known 1 on the W
Northern harrier <i>Circus cyaneus</i>	--/SSC	Throughout lowland California; has been recorded in fall at high elevations	Grasslands, meadows, marshes, and seasonal and agricultural wetlands providing tall cover	Known 1 observec area.
Sharp-shinned hawk <i>Accipiter striatus</i>	--/SSC	Permanent resident on the Sierra Nevada, Cascade, Klamath, and north Coast Ranges at midelevations and along the coast in Marin, San Francisco, San Mateo, Santa Cruz, and Monterey Counties; winters over the rest of the state except very high elevations	Dense canopy ponderosa pine or mixed-conifer forest and riparian habitats	Known 1 migration habitat is
Cooper's hawk <i>Accipiter cooperii</i>	--/SSC	Throughout California except high altitudes in the Sierra Nevada; winters in the Central Valley, southeastern desert regions, and plains east of the Cascade Range; permanent residents occupy the rest of the state	Nests primarily in riparian forests dominated by deciduous species; also nests in densely canopied forests from digger pine-oak woodland up to ponderosa pine; forages in open woodlands	Known 1 migration habitat is
Swainson's hawk <i>Buteo swainsoni</i>	FSS,MIS/T	Lower Sacramento and San Joaquin Valleys, the Klamath Basin, and Butte Valley; the state's highest nesting densities occur near Davis and Woodland, Yolo County	Nests in oaks or cottonwoods in or near riparian habitats; forages in grasslands, irrigated pastures, grain fields, and vegetable crops	Known 1 on the W nest site: area (Hu occasion during tl nesting t were ins) surveys.

Appendix C				
SPECIAL-STATUS WILDLIFE SPECIES WITH POTENTIAL TO OCCUR IN THE PROJECT				
Common Name Scientific Name	Status * Federal/State	California Distribution	Habitats	Pote
Ferruginous hawk <i>Buteo regalis</i>	SC/SSC	Does not nest in California; winter visitor along the coast from Sonoma County to San Diego County, eastward to the Sierra Nevada foothills and southeastern deserts, the Inyo-White Mountains, the plains east of the Cascade Range, and Siskiyou County	Open terrain in plains and foothills where ground squirrels and other prey are available	Known 1 foraging
Merlin <i>Falco columbarius</i>	--/SSC	Does not nest in California; rare but widespread winter visitor to the Central Valley and coastal areas	Forages along coastlines, open grasslands, savannas, and woodlands; often forages near lakes and other wetlands	Moderat may occ: during tr
American peregrine falcon <i>Falco peregrinus anatum</i>	--/E,FP	Permanent resident on the north and south Coast Ranges; may summer on the Cascade and Klamath Ranges south through the Sierra Nevada to Madera County; winters in the Central Valley south through the Transverse and Peninsular Ranges and the plains east of the Cascade Range	Nests and roosts on protected ledges of high cliffs, usually adjacent to lakes, rivers, or marshes that support large populations of other bird species	Known 1 foraging managed project s onsite ar region.
Prairie falcon <i>Falco mexicanus</i>	MIS/SSC	Found as permanent resident on the south Coast, Transverse, Peninsular, and northern Cascade Ranges, the southeastern deserts, Inyo-White Mountains, Modoc, Lassen, and Plumas Counties, and the foothills surrounding the Central Valley; winters in the Central Valley, along the coast from Santa Barbara County to San Diego County, and in Marin, Sonoma, Humboldt, Del Norte, and Inyo Counties	Cliffs or escarpments for nesting; adjacent dry, open terrain or uplands, marshes, and seasonal marshes for foraging	Known 1 foraging nesting 1 was not
Greater sandhill crane <i>Grus canadensis tabida</i>	FSS,MIS/T,FP	Breeds on the plains east of the Cascade Range and south to Sierra County; winters in the Central Valley, southern Imperial County, Lake Havasu National Wildlife Refuge, and the Colorado River Indian Reserve	Summers in open terrain near shallow lakes or freshwater marshes; winters in plains and valleys near bodies of fresh water	Known 1 suspecte
Long-billed curlew <i>Numenius americanus</i>	--/SSC	Nests in northeastern California in Modoc, Siskiyou, and Lassen Counties; winters along coast or in interior valleys west of Sierra Nevada	Nests at high-elevation grasslands adjacent to lakes or marshes during migration and in winter; frequents coastal beaches and mudflats or interior grasslands and agricultural fields	Known 1 observec areas. T project a
Black tern <i>Chlidonias niger</i>	--/SSC	Spring and summer resident of the Central Valley, Salton Sea, and northeastern California where suitable emergent wetlands occur	Freshwater wetlands, lakes, ponds, moist grasslands, and agricultural fields; feeds mainly on fish and invertebrates while hovering over water	Known 1 been doi past surv nesting c onsite.

Appendix C				
SPECIAL-STATUS WILDLIFE SPECIES WITH POTENTIAL TO OCCUR IN THE PROJECT				
Common Name Scientific Name	Status * Federal/State	California Distribution	Habitats	Pote
Western burrowing owl <i>Athene cunicularia hypugae</i>	--/SSC	Lowlands throughout California, including the Central Valley, northeastern plateau, southeastern deserts, and coastal areas; rare along south coast	Rodent burrows in sparse grassland, desert, and agricultural habitats	Not kno observec observec
Short-eared owl <i>Asio flammeus</i>	--/SSC	Permanent resident along the coast from Del Norte County to Monterey County although very rare in summer north of San Francisco Bay, in the Sierra Nevada north of Nevada County, in the plains east of the Cascades, and in Mono County; small, isolated populations also nest in the Central Valley; winters on the coast from San Luis Obispo County to San Diego County, in the Central Valley from Tehama to Kern County, in the eastern Sierra Nevada from Sierra County to Alpine County, on the Channel Islands, and in Imperial County	Freshwater and salt marshes, lowland meadows, and irrigated alfalfa fields; needs dense tules or tall grass for nesting and daytime roosts	Known 1 been obs habitats; nesting x during e: habitat.
Red-breasted sapsucker <i>Sphyrapicus rubber</i>	MIS/---	Coastal mountains from Del Norte County to Sonoma Counties, through Cascades to Lassen County; south in Sierra Nevada to Kern County	Coniferous forests and mixed woodlands; nests in cavities in large trees or snags	High; su suitable 1
Loggerhead shrike <i>Lanius ludovicianus</i>	--/SSC	Resident and winter visitor in lowlands and foothills throughout California; rare on coastal slope north to Mendocino County, occurring only in winter	Prefers open habitats with scattered shrubs, trees, posts, fences, utility lines, or other perches	Known 1 during su project a
Yellow warbler <i>Dendroica petechia</i>	MIS/---	Nests over all of California except the Mojave Desert region, and high altitudes in the Sierra Nevada; winters along the Colorado River and in parts of Imperial and Riverside Counties; two small permanent populations in San Diego and Santa Barbara Counties	Primarily nests in riparian habitats adjacent to creeks and rivers	Known 1 during rr project s
Tricolored blackbird <i>Agelaius tricolor</i>	--/SSC	Largely endemic to California; permanent residents in the Central Valley from Butte County to Kern County; at scattered coastal locations from Marin County south to San Diego County; breeds at scattered locations in Lake, Sonoma, and Solano Counties; rare nester in Siskiyou, Modoc, and Lassen Counties	Nests in dense colonies in emergent marsh vegetation, such as tules and cattails, or upland sites with blackberries, nettles, thistles, and grain fields;	Low; sui species r the site c low qual
Pronghorn <i>Antilocapra americana</i>	MIS/---	Eastern slope of Cascade and Sierra Nevada Ranges in Modoc, Lassen, Plumas, and Sierra Counties.	Forage mostly in sagebursh scrub and juniper woodlands; use forested areas during migration	Known 1 site; a he observec
Mule deer <i>Odocoileus hemionus</i>	MIS/---	Cascade Range and Great Basin Eastern	Summer at higher elevations in coniferous forests and riparian areas; winter in lower elevations near valley edges	High; sp site

Appendix C SPECIAL-STATUS WILDLIFE SPECIES WITH POTENTIAL TO OCCUR IN THE PROJECT				
Common Name Scientific Name	Status * Federal/State	California Distribution	Habitats	Pote
Western red bat <i>Lasiurus blossevillii</i>	FSS/---	Distribution scattered and unclear in California	Riparian areas; roost in tree foliage	Unknow surveys. very den
Pale Townsend's (western) big-eared bat <i>Corynorhinus townsendii pallascens</i>	--/SSC	Klamath Mountains, Cascades, Sierra Nevada, Central Valley, Transverse and Peninsular Ranges, Great Basin, and the Mojave and Sonora Deserts	Mesic habitats; gleans insects from brush or trees and feeds along habitat edges	Unknow but none
Pygmy rabbit <i>Brachylagus idahoensis</i>	--/SSC	Found in the Great Basin in portions of Modoc, Lassen, and Mono Counties	Associated with tall, dense sagebrush, bitterbrush, and piñon-juniper habitats	Not kno site is ou
Pit Roach <i>Lavinia symmetricus mitratus</i>	--/SSC	Upper Pit River drainage	Associated with small, warm intermittent streams	Not kno tributari
Hardhead <i>Mylopharodon conocephalus</i>	--/SSC	Sacramento-San Joaquin River drainage - Pit River to Kern River	Clear deep pools with sand-gravel-boulder substrate with slow water velocities	Known 1
Western Pond Turtle <i>Actinemys marmorata marmorata</i>	FSS/SSC	San Francisco north to British Columbia, west of the crest of the Cascades and Sierra Nevada.	Ponds, lakes, streams, marshes and irrigation ditches with abundant vegetation and rocky or muddy bottoms.	Known 1
<p>* Status definitions:</p> <div> <div> E=Listed as Endangered under the federal or state Endangered Species Act SSC=California species of special concern FSS=United States Forest Service Sensitive Species MIS=United States Forest Service Management Indicator Species </div> <div> T=Listed as Threatened under the federal or state Endangered Species Act FP=California fully protected species BLMSS=Bureau of Land Management Sensitive Species </div> </div>				

Appendix D SPECIAL-STATUS VASCULAR PLANTS WITH POTENTIAL TO OCCUR AT THE ASH CREEK WIL LASSEN AND MODOC COUNTIES, CALIFORNIA				
Common Name Scientific Name	Status* (CNPS)	Geographic Range (CA Counties; States)	CNPS Habitats† (Elevation)	
Hillside Arnica <i>Arnica fulgens</i>	2.2	Lassen, Modoc, Plumas, Siskiyou?, and elsewhere	GBScr, LCFrs, Medws/mesic (1495-2700 m)	
Lemmon's Milkvetch ¹ <i>Astragalus lemmonii</i>	1B.2	Lassen, Modoc, Mono, Plumas, Sierra, Shasta; Nevada and Oregon	GBScr, Medws, MshSw (Lake shore) (1007-2200 m)	
Long-haired Star Tulip <i>Calochortus longebarbatus</i> var. <i>longebarbatus</i> .	1B.2	Lassen, Modoc, Shasta, Siskiyou; Oregon and Washington	GBScr, LCFrs (openings and drainage; Medws, VnPls/clay, mesic (1200-1900 m)	
Awne'd Sedge <i>Carex altherodes</i>	2.2	Lassen, Modoc; Idaho, Nevada, New Mexico, Oregon, Utah, Washington and elsewhere	Medws, MshSw, PJWld/mesic (1300-1400 m)	
Liddon's Sedge <i>Carex petasata</i>	2.3	Alpine, Lassen, Mono, Modoc; Oregon and elsewhere	BUFr, LCFrs, Medws, PJWld (600-3320 m)	
Sheldon's Sedge ¹ <i>Carex sheldonii</i>	2.2	Lassen, Modoc, Placer, Plumas; Idaho, Oregon, Utah and elsewhere	LCFr (mesic), MshSw (freshwater), R; (1200-2012 m)	
Castlegar Hawthorne <i>Crataegus castlegarensis</i>	3	Shasta, Modoc; Oregon, Washington, Idaho, Utah, Wyoming and Canada	RpScr, moist rocky loam (0-975)	
Doublet <i>Dimeresia howellii</i>	2.3	Lassen, Modoc; Idaho, Nevada and Oregon	LCFr, PJWld/ volcanic, xeric (1340-2380 m)	
Great Basin Downingia ¹ <i>Downingia laeta</i>	2.2	Lassen, Modoc, Siskiyou; Idaho, Nevada, Oregon, Utah, Wyoming, and elsewhere	GBScr (mesic), Medws, MshSw (shallow freshwater), PJWld/ mesic, VnPls (1220-2200 m)	
Volcanic Daisy <i>Erigeron elegantulus</i>	4.3	Lassen, Modoc, Shasta, Siskiyou and Tehama; and from Oregon	GBScr, PJWld, UCFrs, AlpBr, SCFr/volcanic; (1000-2665 m)	
Prostrate Buckwheat <i>Eriogonum prociduum</i>	1B.2	Lassen, Modoc; Nevada and Oregon	GBScr, PJWld, UCFrs/volcanic (1300-2705 m)	
Aleppo Avens <i>Geum aleppicum</i>	2.2	Lassen, Modoc, Siskiyou; Oregon and elsewhere	GBScr, LCFrs, Medws (450-1500 m)	
Boggs Lake Hedge-hyssop <i>Gratiola heterosepala</i>	1B.2 SE	Fresno, Lake, Lassen, Madera, Merced, Modoc, Placer, Sacramento, Shasta, Siskiyou, San Joaquin, Solano, Tehama; Oregon	MshSw(lake margin), VnPls/clay (10-2375 m)	
Baker's Globemallow <i>Ilamma bakeri</i>	4.2	Lake, Lassen, Mendocino, Modoc, Shasta, Siskiyou, Tehama, Trinity; Oregon	Chprl, GBScr, LCFrs (openings), PJWld/volcanic-often burn areas (1000-2500 m)	
Raven's Lomatium <i>Lomatium ravenii</i>	2.3	Lassen, Modoc; Idaho, Nevada, Oregon and Utah	GBScr (adobe, alkaline) (1000-3000 m)	

Appendix D SPECIAL-STATUS VASCULAR PLANTS WITH POTENTIAL TO OCCUR AT THE ASH CREEK WIL LASSEN AND MODOC COUNTIES, CALIFORNIA				
Common Name Scientific Name	Status* (CNPS)	Geographic Range (CA Counties; States)	CNPS Habitats† (Elevation)	
Cusick's Monkeyflower <i>Mimulus cusickii</i>	2.3	Modoc; Idaho, Nevada, Oregon and Washington	GBSrs, LCFrs/roadside, gravelly, scre volcanic (600-1830 m)	
Ephemeral Monkeyflower <i>Mimulus evanescens</i>	1B.2	Lassen, Modoc, Siskiyou; Idaho, Nevada, Oregon	GBScr, LCFrs, PJWld/gravelly or rock (1250-1740 m)	
Egg Lake Monkeyflower <i>Mimulus pygmaeus</i>	4.2	Lassen, Modoc, Plumas, Shasta, Siskiyou; Oregon	GBScr, LCFrs, Medws, PJWld/mesic, streamsides, volcanic, clay (500-1840m)	
Slender Orcutt Grass <i>Orcuttia tenuis</i>	1B.1 SE,JE	Lake Lassen, Plumas, Sacramento, Shasta, Siskiyou and Tehama	VnPls (35-1760 m)	
Janish's Beardtongue <i>Penstemon janishiae</i>	2.2	Lassen, Modoc; Idaho, Nevada and Oregon	GBScr, LCFrs, PJWld/gravelly, volcan (1065-2350 m)	
Profuse-flowered Pogogyne <i>Pogogyne floribunda</i>	1B.2	Lassen, Modoc, Shasta, Siskiyou; Oregon	VnPls (945-1745 m)	
Eel-grass Pondweed <i>Potamogeton zosteriformis</i>	2.2	Contra Costa, Lake, Lassen, Modoc, Shasta	MshSw (freshwater) (0-1860 m)	
Black Rock Potentilla <i>Potentilla basaltica</i>	2.2	Lassen; Nevada	GBScr, Medws, PJWld (mesic) 1400-1800 m)	
Macoun's Buttercup ² <i>Ranunculus macounii</i>	2.2	El Dorado, Lassen, Mendocino, Modoc; Arizona, Nevada, New Mexico, Oregon, Utah, Washington, Wyoming and elsewhere	GBScr, Medws, PJWld (mesic) (1400-1800 m)	
Marsh Skullcap ² <i>Scutellaria galericulata</i>	2.2	El Dorado, Lassen Modoc, Nevada, Plumas, Shasta, San Joaquin, Siskiyou?; Oregon and elsewhere	LCFrs, Medws, MshSw (0-2100 m)	
Sweet Marsh Ragwort <i>Senecio hydrophiloides</i>	4.2	Lassen, Modoc, Mono, Plumas, and Siskiyou Counties; Oregon, Nevada and elsewhere	LCFrs, Medws (mesic); 490-2800 m)	
Marsh Hedge Nettle <i>Stachys palustris</i> ssp. <i>pilosa</i>	2.3	Modoc, Shasta, Siskiyou; Arizona, Nevada, New Mexico, Oregon, Utah, Washington and elsewhere	GBSrc (mesic), Medws, (1200-1770 m)	
Woolly Stenotus <i>Stenotus lanuginosus</i>	2.2	Lassen, Modoc; Idaho, Oregon, Washington and elsewhere	GBSrc, Medws, PJWld (gravelly loam) (1500-1910 m)	
Howell's Thelypodium ¹ <i>Thelypodium howellii</i> ssp. <i>howellii</i>	1B.2	Lassen, Modoc, Shasta; Oregon and Washington	GBScr, Medws (alkaline) (1200-1830 m)	

Appendix D SPECIAL-STATUS VASCULAR PLANTS WITH POTENTIAL TO OCCUR AT THE ASH CREEK WIL LASSEN AND MODOC COUNTIES, CALIFORNIA				
Common Name Scientific Name	Status* (CNPS)	Geographic Range (CA Counties; States)	CNPS Habitats† (Elevation)	
Plummer's Clover <i>Trifolium gymnocarpon</i> var. <i>plummarae</i>	2.3	Lassen, Modoc, Sierra?; Arizona, Idaho, Nevada, New Mexico, Oregon, Utah, Wyoming and elsewhere	GBScr, PJWld, (1500-1920 m)	
Howell's Triteleia ² <i>Triteleia grandiflora</i> var. <i>howellii</i>	2.1	Modoc, Siskiyou; Oregon, Washington and elsewhere	GBScr, PJWld (700-1500 m)	
Flat-leaved Bladderwort <i>Utricularia intermedia</i>	2.2	Butte, Fresno, Modoc, Plumas, Tulare; Idaho, Nevada, Utah, Washington and elsewhere	BgFns, Medws (mesic), MshSw (lake π (1200-2700 m)	
¹ Plant species encountered during the 2008 surveys ² Plant species documented in the CNDDDB from the ACWA or immediate vicinity * California Native Plant Society (CNPS) Status Codes: List 1B = Rare, Threatened, or Endangered in CA and elsewhere List 2 = Rare, Threatened or Endangered in CA but more common elsewhere. List 4 = Limited Distribution in CA Threat ranks: 0.1 = high; 0.2 = moderate; 0.3 = low † Plant Community Association Codes: BgFns = Bogs and Fens; BUFrs = Broadleafed Upland Forest; Chprl = Chaparral; GBScr = Great Basin Scrub; LCFrs = Low Medws = Meadows and Seeps; MshSw = Marshes and Swamps; PJWld = Pinyon Juniper Woodland; UCFrs = Upper Montane Coniferous Forest; VnPls = Vernal Pools				

NATIONL ENVIRONMENTAL POLICY ACT COMPLIANCE

There is no federal nexus for this project and therefore it is not subject to NEPA.